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UNITED STATES SUGAR EQUALIZATION BOARD

A Statistical Survey of the Sugar Industry and Trade of the United States

Statistics of Stocks, Receipts, Melt-
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Sugar in the Years 1918 and 1919

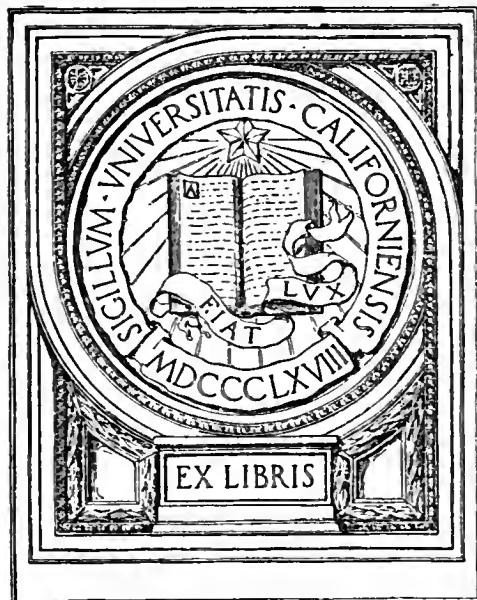
By

JOSHUA BERNHARDT

In Charge Sugar Section Statistical Division, United States Food Administration and Chief,
Statistical Department, United States Sugar Equalization Board, Inc.

1920

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INTRODUCTION

The statistical data presented in the following pages are not the results of one of the customary governmental surveys of an industry, carefully prearranged and systematically executed, but are merely an orderly compilation of the most important sugar statistics obtained, as an incidental by-product of war time Food Control, by various government agencies, particularly the Statistical Departments of the United States Food Administration, the International Sugar Committee and the United States Sugar Equalization Board.

Almost the first step taken by the Food Administration in its efforts at regulation of sugar prices and distribution was the agreement with the beet sugar producers, which provided for the creation of a "Food Administration Sugar Distributing Committee" to centralize the distribution of the entire beet sugar crop. In order to carry on its functions effectively, this Committee obtained reports from the beet sugar producers of the sales made by them, and tables were compiled therefrom showing the geographical distribution of the beet sugar crop each month.

An agreement with the refiners, of about the same date, created the American Refiners' Committee, whose duty it was to allocate to the individual refineries the raw sugar purchased by the International Sugar Committee, which was the agency established by the Food Administration to purchase raw sugars for the United States and the Allies. The American Refiners' Committee, in co-operation with the International Sugar Committee, instituted a system of weekly reports as a basis for its operations to ascertain the refiners' stocks, receipts, meltings, etc. Dr. William Marshall, formerly Professor of Mathematics of Purdue University, was appointed Chief Statistician by the Food Administrator.

Both committees were continued for the control of the 1918 crops and there has thus resulted, for the first time in the history of the sugar trade, a complete official statistical record for a period of two years of sugar stocks, receipts, meltings, etc. These basic statistical data thus secured directly from records of individual cane refineries and beet sugar factories, and obtainable only in some such national emergency, as the Great War, comprise the body of this book. For the sake of logical completeness and orderly arrangement some supplementary material has been added from the published documents of other government bureaus. Thus, for example, figures have been inserted in the first chapter of stocks of wholesalers, retailers, candy manufacturers, bakers, etc., which material was obtained by the Department of Agriculture and published in the "Food Surveys," along with statistics of other food stocks.

Although these sugar statistics originated thus in administrative or executive necessity, they soon became indispensable to the Food Administration, the various War Bureaus, and the sugar trade journals, as the sole source of accurate information on the status of the sugar stocks, supplies and consumption, a prompt and exact knowledge of which became increasingly important as the war prolonged itself and brought about a progressive decline in the world's available sugar supplies.

It has not been possible, nor would it have been advisable, within the limits of this book, to analyze the many problems suggested by the tables, relating to the economic efficiency of sugar production and distribution in the United States. If, however, the same degree of interest, both by the sugar trade and the general public, is exhibited for this more orderly and complete compilation that was in evidence during the period of weekly and monthly releases of the fragmentary data, then the problems suggested by the basic figures here given will no doubt be analyzed by those more competent than the writer to do so.

An apology is perhaps due the reader for the use of various units of quantity, but it was deemed best to adopt the units employed by the various branches of the sugar trade, long tons for the raw sugar trade and short tons or pounds for the refined. To avoid confusion, the unit of quantity employed has been indicated for each table. The author wishes to acknowledge the valuable assistance of the members of the Statistical Department of the United States Sugar Equalization Board in the preparation of the manuscript for publication. Miss Emily M. Cox and Mrs. Ellen T. Woods compiled some of the tables and aided in checking the preliminary manuscripts. Mr. Howard M. Ballou prepared some of the tables and checked the proofs. He also contributed several helpful suggestions.

The diagrams in the book were prepared by Mr. Lewis Padgett, of the United States Food Administration.

JOSHUA BERNHARDT.

United States Sugar Equalization Board, Inc., June, 1920.

SUMMARY

The statistics presented in the following pages, supplemented by figures issued by various government bureaus, make possible a complete compilation for at least one representative year of all salient statistics relating to the sugar supply of the United States, beginning with the production and costs in the various sources of supply and ending with the distribution of the refined product and prices in the United States. It would be folly to attempt the inclusion within a single volume of so voluminous a mass of data, for considerable duplication of printing would be involved, but for those who may, for various purposes wish to secure a more comprehensive statistical survey than is here afforded, it is desirable to point out the manner in which it may be accomplished. The following skeleton outline, with the foot-note references in the nature of a bibliography, is therefore given here.

In the year 1918 Cuba supplied the United States with 2,180,825 long tons of raw sugar, or 70.36 per cent. of the total supplied to the cane refineries. Of this amount refineries at New York received 1,123,272 tons, or 51 per cent., while Philadelphia came second with only 416,403 tons.* The total cost of production for this Cuban sugar (after deduction for receipts from by-products) averaged \$78.62 per ton, as against \$58.08 the previous crop, the largest single factor being the cost of the cane, which was \$43.41 per ton.†

Hawaii contributed 443,996 tons of raw sugar in the same year, or 14.32 per cent. of the total refiners' receipts, of which 339,319 tons, or about three-fourths of the total, went to the refineries of San Francisco. The average cost of production for this Hawaiian sugar was far above that for Cuba, being \$106.79 per ton, as against \$78.62 per ton for Cuba.‡

Porto Rico and St. Croix shipped 359,469 tons, or 11.60 per cent. of the total refiners' raw sugar supplies, of which 284,480 tons, or 79 per cent., was received at the New York refineries and 55,372 tons at New Orleans. The other refining ports obtained but small quantities. The average cost of production for Porto Rican sugar, \$91.36 per ton, was higher than that of Cuba, but lower than that of Hawaii. The minor sources of supply for refineries, the Philippines, the Continental United States, and the miscellaneous foreign countries, provided only 3.72 per cent. of the total.

The total receipts at refineries in 1918 amounted to 3,099,475 tons, of which some quantity was received each week in the year, the minimum being 10,225 tons and the maximum 112,133 tons. Of the total receipts at refineries for the year almost one-half, 48.11 per cent., was received at New York, 15.42 per cent. at Philadelphia, 13.39 per cent. at New Orleans, 12.92 per cent. at San Francisco, 6.31 per cent. at Boston, 2.48 per cent. at Savannah and 1.37 per cent. at Galveston. In addition to refiners' receipts, there were small imports of sugar (27,011 tons, or less than 1 per cent. of total) which did not pass through refineries, but were distributed directly to the trade in unrefined form.

All the refiners' receipts are raw sugars, which must be refined before passing into consumption. For the refineries at Boston, New York, Philadelphia, San Francisco, there was some production of refined sugar each week; the average weekly melt at these refining centers being 3,750 tons, 28,525 tons, 9,212 tons and 7,688 tons, respectively. At New Orleans there was a production in every week but three, the average weekly melt being 8,643 tons. For the

* See Chapter II, below, for details of refiners' receipts by weeks and months at each port.

† See Tariff Information Series, No. 9 (U. S. Tariff Commission), for details of costs of production in the various sources of supply in recent years.

‡ See Chapter III, below, for the weekly and monthly refiners' meltings at each port.

smaller refining centers, Galveston and Savannah, there was no production for seventeen weeks and six weeks, respectively. For the whole year 1918, out of a total of 3,086,083 tons, New York melted 1,483,320 tons, as compared with 477,075 tons at Philadelphia, 414,889 tons at New Orleans, 399,782 tons at San Francisco, 194,982 tons at Boston, 73,703 tons at Savannah and 42,332 tons at Galveston. The average cost of raws to the refineries per pound of refined in this year was 6.717 cents and the total refinery cost was .961 cents per pound. The average cost of producing the refined sugar, including the cost of the raw sugars, was 7.549 cents per pound, and since the average price obtained for the refined product was 7.74 cents per pound, the average profit to the refiners was .191 cents per pound, which was equivalent to a "return on the productive investment represented by profits" of 10.32 per cent.*

From the above meltings of 3,086,083 tons of raws there were produced 2,879,083 tons of refined sugar, the remainder representing the loss of conversion from raw to refined. Of this refined output, 2,703,675 tons, or 93.9 per cent., were distributed for domestic consumption, while 150,132 tons were exported, and the small balance remaining was reserved for stock and carried into 1919.† To refiners' deliveries for domestic consumption there were added both 523,630 tons from the domestic beet sugar and 113,335 tons of Louisiana direct consumption sugars. Beet growers received an average price of \$10 per ton for the beets from which the sugar was made,‡ and the average cost of production for the beet sugar was \$109.96 per ton, or 5.498 cents per pound, while the average cost of the Louisiana sugars was \$129.43 per ton, or 6.471 cents per pound.§ Small quantities of raw and washed sugars and Hawaiian refined sugar were also distributed, making a total consumption for the year of 3,394,127 tons, or 73 pounds per capita.

Data as to distribution of the refined product by points of shipment and destinations are not available for the exact calendar year 1918, but for the year November 1, 1917-November 1, 1918, out of a total distribution of 3,755,686 short tons of refiners' cane, beet and Louisiana sugars, 1,990,686 short tons, or 53 per cent., were shipped from the eastern portion of the country; 674,622 short tons, or 18 per cent., from the southern portion; 982,862 tons, or 26 per cent., from the west, and only 107,516 tons, or 3 per cent., from the central region. May was the month of largest shipments of refiners' cane sugar, 406,292 tons, and November was the month for the largest beet sugar shipments, 144,687 tons, while for Louisiana direct consumption grades the month of largest deliveries was December, 120,000 tons. For all grades combined the "peak" month was May, when 446,613 tons were shipped, while the lowest quantity shown was in January, when 220,217 tons were distributed.

The beet sugar was distributed to 36 different states, although seven states received but negligible quantities. To the state of Illinois the largest quantity of beet sugar was shipped, 146,188 tons.¶ All the 48 states and the District of Columbia obtained refiners' cane sugar, the quantities ranging from 1,081 tons for Wyoming to 558,573 tons to New York. For the beet and refiners' cane sugar combined the three states of Illinois, Pennsylvania and New York together obtained over one-third of the total for the entire United States.

As to the disposition of the sugar supplies by classes of consumers, it was found that in the five months from July, through November of 1918, there was consumed by so-called "non-essential" industries 12.4 per cent. of the total distributed; by the "essential" industries, 8.6

* See Tariff Information Series, No. 16 (U. S. Tariff Commission), for details of refiners' costs and profits.

† See Chapter IV, below, for deliveries of sugar by months from all points of shipment.

‡ See the Monthly Crop Reporter of the Department of Agriculture for statistics on the domestic beet and cane crops. For statistics on cost of growing sugar beets, see Bulletins 693, 735 and 748 of the Department of Agriculture, and also the reports of the State Beet Sugar Commissions to Food Administrator Hoover in 1918 (Files of the Food Administration).

§ See Tariff Information Series, No. 9.

¶ See Chapter V, below, for the figures of monthly distributions to all States of beet and cane sugars.

per cent.; by public eating places, 4 per cent.; by manufacturers of baked goods, 5.8 per cent.; by retailers and other selling for direct consumption, 69.2 per cent.*

In the process of manufacture and distribution of the refined product, stocks accumulate in varying quantities. It was found that refiners' stocks of raw sugars in 1918 varied from about one day's normal supply for the entire country's consumption to sixteen days' supply, but the stocks of the refined product were never below three days' supply, while the highest point in 1918 represented eight days' supply. Stocks at beet sugar factories ranged from four days' to thirty-eight days' supply. Taking into consideration wholesalers' and retailers' stocks, as well as the stock of the sugar-using industries, it was found that the total supplies in the country on January 1, 1918, represented about fifty days' supplies, as against about thirty-six days' supplies on July 1st, and sixty days' supply on December 31st.† It was found that of the reported exports of 150,132 long tons in 1918, 133,000 tons were refined "on toll" for the British Royal Commission, an agency representing the Allies, and only 17,132 tons were exports in the usual sense of the term.‡

The price paid by the consumer for the refined product in the United States averaged 9.68 cents per pound, the range during the year being from 9.075 cents to 10.61 cents per pound.§

* See Chapter VI for statistics of distribution by States and months to various classes of business.

† See Chapter I for statistics of stocks, also the Food Surveys of the Department of Agriculture.

‡ See Chapter VII, below, for statistics of exports and toll shipments, also the Monthly Summary of the Department of Commerce.

§ See the Monthly Reviews of the United States Department of Labor for retail prices of sugar in various parts of the country.

CHAPTER I

STOCKS OF SUGAR

Perhaps the first problem that would confront the investigator preparing an economic or statistical survey of the sugar industry of the United States would be that of ascertaining the stocks of sugar on hand at any given date in the country.

The sugar supply of the United States consists at any specific moment of three parts: first, the raw and refined sugars held in mills, factories, and refineries—termed the “visible” supply; second, the sugar held by hotels, restaurants, sugar-using industries, jobbers, wholesalers, and retailers—termed the “invisible” supply; and, third, the sugar available from the current seasonal production in the sources of supply, chiefly Cuba, Hawaii, Porto Rico, the Philippines, Louisiana, and the beet-sugar territory of the United States. During the existence of the International Sugar Committee and the United States Sugar Equalization Board, a continuous statistical record was obtained of the “visible” supply for the two years, 1918 and 1919. Figures on the “invisible” supply of sugar were obtained by the Department of Agriculture, published in its “Food Surveys,” and also by the License Division of the Food Administration. In this chapter statistics compiled from all these sources are combined in a logical order for convenience in reference and analysis.

Refiners' Stocks of Raw and Refined Sugar

Tables 1 and 2 give the stocks of raw sugar held by refiners in 1918 and 1919, at each port, as reported weekly by refiners to the Statistical Department of the International Sugar Committee in 1918 and to the Statistical Department of the United States Sugar Equalization Board in 1919. It will be noted that both in 1918 and 1919, considering all ports combined, stocks of raw sugars were extremely low at the beginning of the year. There was then a constant increase until about the middle of the year from which point just as constant a decrease followed. The maximum point in 1918 was reached on June 22, when stocks were 167,020 long tons, and in 1919 the highest point was on May 24, 1919, when stocks were 230,327 long tons. There was thus both in 1918 and in 1919 the customary increase in refiners' raw cane sugar stocks at the season when production was heaviest in the sources of the cane sugar supply, while consumption in the United States was lightest, and on the other hand there was the usual decrease when the production in the sources of supply was lowest while consumption in the United States was highest. For the greater part of the year New York had the largest stocks, the maximum in 1918 being 55,719 tons on June 22, and in 1919, 68,520 tons on May 17. The greatest accumulations of raws at the other principal ports in 1918 came as follows: For Boston, 16,013 tons on July 6; for Philadelphia, 41,823 tons on July 20; for San Francisco, 30,982 tons on April 27, and for New Orleans, 46,868 tons on June 22. In 1919 the figures were somewhat larger: for Boston, 22,277 tons on May 24; for Philadelphia, 55,067 tons on May 24; for San Francisco, 48,111 tons on April 26, and for New Orleans, 43,385 tons on May 24. (See Diagram 1.)

In terms of the country's normal daily requirements for consumption,* these maximum supplies in 1919 represented a little over two days' supply at Boston, nearly seven days' supply at New York, about five and one-half days' supply at Philadelphia, nearly five days' supply at San Francisco and four days' supply at New Orleans. The ports of Savannah and Galveston never had more than about a half day's supply on hand. For all ports combined there was a maximum of about 22 days' requirements on May 24, 1919, as compared with a maximum in 1918 of 16 days' supply on June 22. The lowest point reached in both years represented about one day's supply for the country. In terms of melting capacity the situation was more favorable, the maximum raw stocks in 1919, for example, representing nearly 27 days' average meltings.

*Based on the daily average for the six-year period, 1914-1919, 10,000 tons of refined sugar.

TABLE 1
Refiners' Stocks of Raw Sugar at the End of Each Week in 1918
 (Unit: Long Tons)

Date	Boston	New York	Philadelphia	Savannah	New Orleans	Galveston	San Francisco	Total
Dec. 29, 1917.....	181	1,188	....	....	1,946	....	6,939	10,254
Jan. 5, 1918.....	1,681	3,715	301	....	1,153	....	7,134	13,984
Jan. 12.....	2,942	3,272	3,552	....	3,403	....	690	13,859
Jan. 19.....	3,411	8,310	9,605	1,651	1,404	1,504	2,550	28,435
Jan. 26.....	3,917	13,574	6,249	126	7,763	....	1,879	33,508
Feb. 2.....	1,308	7,974	4,345	55	7,025	....	3,217	23,924
Feb. 9.....	365	9,968	3,318	664	12,868	2,152	5,353	34,688
Feb. 16.....	4,508	9,666	3,889	3,246	12,356	1,079	10,083	44,827
Feb. 23.....	6,871	10,978	4,372	3,758	12,829	....	11,937	50,745
Mar. 2.....	5,776	16,691	7,171	4,156	7,149	....	10,523	51,466
Mar. 9.....	5,850	9,888	6,698	5,603	8,650	1,860	10,503	49,052
Mar. 16.....	7,532	14,380	6,487	8,199	8,068	3,372	11,571	59,609
Mar. 23.....	4,534	17,439	6,671	9,019	8,361	3,707	10,444	60,175
Mar. 30.....	4,717	15,787	6,567	8,793	8,531	2,291	13,641	60,327
Apr. 6.....	7,592	13,841	20,820	8,821	10,217	910	9,947	72,148
Apr. 13.....	3,549	10,126	10,359	7,407	8,663	4	20,374	60,482
Apr. 20.....	8,891	21,078	14,853	5,973	18,611	1,938	20,963	92,307
Apr. 27.....	10,016	22,984	14,239	4,570	22,308	573	30,982	105,672
May 4.....	5,671	22,024	11,703	3,334	26,228	....	23,578	92,538
May 11.....	5,586	20,560	23,418	2,014	36,348	713	20,061	108,700
May 18.....	11,278	35,584	20,953	372	41,032	2,377	18,201	129,797
May 25.....	12,026	39,963	33,557	671	44,137	8,159	17,211	155,724
June 1.....	11,383	42,723	27,326	360	44,741	6,828	12,269	145,630
June 8.....	8,740	45,665	27,695	20	44,433	5,751	19,918	152,222
June 15.....	6,872	51,296	28,480	116	43,580	4,815	21,086	156,245
June 22.....	8,790	55,719	30,510	....	46,868	3,917	21,216	167,020
June 29.....	14,192	42,556	34,516	2,473	46,176	3,917	12,849	156,679
July 6.....	16,013	45,971	36,659	5,782	44,716	3,917	11,055	164,113
July 13.....	11,395	36,885	38,244	4,599	44,748	2,659	20,441	158,971
July 20.....	12,472	18,106	41,823	4,126	41,172	4,142	21,144	142,985
July 27.....	8,365	23,605	36,731	2,941	39,859	2,616	20,944	135,061
Aug. 3.....	6,823	15,790	30,503	2,641	35,746	2,901	17,453	111,857
Aug. 10.....	8,183	21,519	30,705	3,481	32,836	2,848	18,650	118,222
Aug. 17.....	7,234	18,493	28,234	2,572	31,636	1,615	16,737	106,521
Aug. 24.....	10,819	15,056	25,938	1,848	22,175	3,143	21,413	100,392
Aug. 31.....	8,524	11,744	17,731	1,719	17,889	1,704	19,455	78,766
Sept. 7.....	8,902	16,722	23,139	502	13,571	128	12,756	75,720
Sept. 14.....	7,978	15,808	20,548	239	11,167	128	10,930	66,798
Sept. 21.....	13,684	10,563	13,529	1,696	5,393	128	11,985	56,978
Sept. 28.....	10,076	14,463	4,500	756	1,109	1,518	13,359	45,781
Oct. 5.....	6,531	14,867	9,789	28	354	1,521	14,203	47,293
Oct. 12.....	7,556	11,703	11,263	233	2,319	3,106	13,846	50,026
Oct. 19.....	7,660	20,346	14,692	....	1,430	2,427	17,379	63,934
Oct. 26.....	8,996	34,014	14,904	....	1,397	3,945	14,175	77,431
Nov. 2.....	11,201	27,201	25,329	....	180	2,392	17,282	83,585
Nov. 9.....	10,407	31,629	24,302	....	180	1,015	15,898	83,431
Nov. 16.....	7,594	22,372	18,867	....	180	....	10,674	59,687
Nov. 23.....	7,589	14,834	16,175	1,912	1,942	....	8,537	50,989
Nov. 30.....	6,260	17,375	11,896	1,912	2,729	....	7,141	47,313
Dec. 7.....	2,063	10,260	9,177	1,912	9,489	....	3,818	36,719
Dec. 14.....	1,642	2,451	4,462	1,909	3,864	....	1,751	16,079
Dec. 21.....	2,339	4,576	4,347	1,795	....	....	603	13,660
Dec. 28.....	1,545	6,548	934	2,013	....	....	4,651	15,691
Dec. 31.....	868	8,734	876	1,928	....	....	7,509	19,915

DIAGRAM 1—REFINERS' STOCKS OF RAW SUGAR AT THE END OF EACH WEEK IN 1918 AND 1919.
(In Thousands of Long Tons)

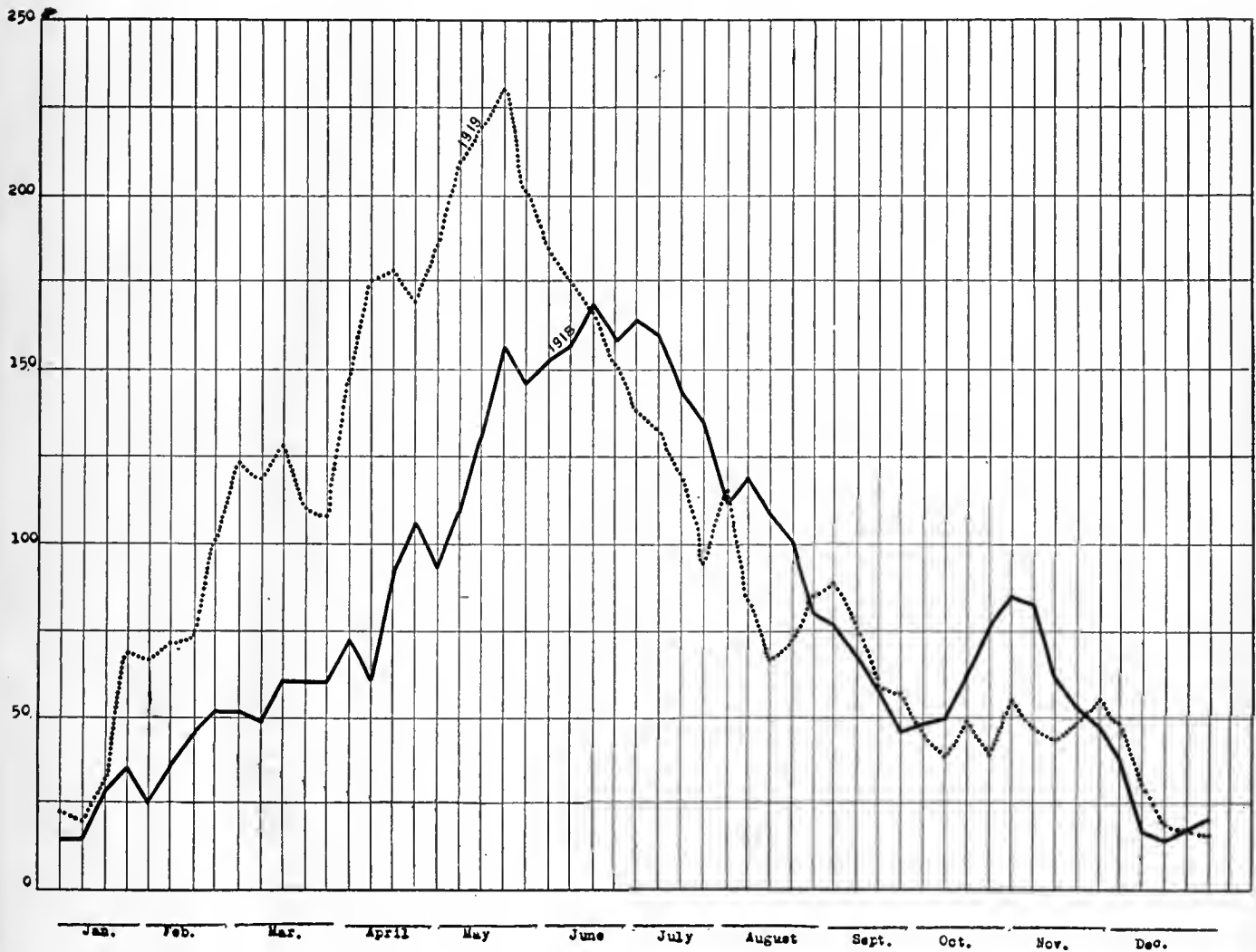


TABLE 2

Refiners' Stocks of Raw Sugar at the End of Each Week in 1919

(Unit: Long Tons)

Date	Boston	New York	Philadelphia	Savannah	New Orleans	Galveston	San Francisco	Total
Jan. 4.....	3,405	4,964	3,151	1,209	1,242	....	7,882	21,853
Jan. 11.....	522	6,693	503	....	....	....	11,739	19,457
Jan. 18.....	2,522	7,962	4,686	....	....	....	15,252	30,422
Jan. 25.....	7,373	22,598	7,196	....	6,281	1,877	23,055	68,380
Feb. 1.....	2,609	13,782	10,538	....	9,239	154	29,847	66,169
Feb. 8.....	5,699	11,029	8,947	....	5,422	3,393	36,020	70,510
Feb. 15.....	3,525	9,387	9,815	622	12,577	2,037	33,849	71,812
Feb. 22.....	6,040	27,093	11,240	2,251	14,848	4,013	34,021	99,506
Mar. 1.....	12,097	43,212	14,044	2,417	13,068	2,498	35,421	122,757
Mar. 8.....	10,511	37,015	13,644	1,439	15,484	3,368	36,617	118,078
Mar. 15.....	10,183	40,189	18,604	2,559	12,634	3,702	40,218	128,089
Mar. 22.....	9,736	30,249	6,000	3,692	15,555	2,228	42,499	109,959
Mar. 29.....	5,923	30,449	10,552	3,311	14,284	699	41,671	106,889
Apr. 5.....	13,577	39,021	22,603	2,389	19,445	3,437	46,180	146,652
Apr. 12.....	15,599	44,104	39,305	1,855	26,018	3,437	44,435	174,753
Apr. 19.....	14,514	50,463	36,057	1,658	27,481	3,490	44,123	177,786
Apr. 26.....	11,357	46,317	30,406	1,251	28,264	2,768	48,111	168,474
May 3.....	16,663	47,198	41,743	4,239	26,909	848	47,715	185,315
May 10.....	12,051	55,648	49,360	4,425	38,664	2,308	46,836	209,292
May 17.....	11,505	68,520	46,473	2,616	41,434	3,168	44,985	218,701
May 24.....	22,277	58,294	55,067	2,252	43,385	1,765	47,287	230,327
May 31.....	16,209	55,271	42,136	3,263	36,243	3,805	44,374	201,301
June 7.....	18,762	51,838	31,612	5,104	33,352	2,168	41,443	184,279
June 14.....	18,235	42,844	31,913	5,627	33,851	3,819	38,568	174,857
June 21.....	11,759	46,709	24,934	3,402	37,775	2,799	38,271	165,649
June 28.....	11,418	37,718	20,877	5,552	33,560	5,012	37,555	151,692
July 5.....	7,604	32,327	18,640	4,105	32,156	3,474	39,230	137,536
July 12.....	10,353	33,127	18,934	6,115	25,183	2,080	36,209	132,001
July 19.....	7,939	35,594	18,826	4,293	17,561	3,357	31,531	119,101
July 26.....	7,105	29,320	10,475	2,804	18,156	1,849	24,049	93,758
Aug. 2.....	4,636	34,190	12,998	3,615	25,179	9,437	24,932	114,987
Aug. 9.....	4,820	19,061	17,065	4,286	14,594	7,933	16,659	84,418
Aug. 16.....	3,037	13,809	12,724	4,246	9,415	6,862	16,134	66,227
Aug. 23.....	2,254	20,628	24,814	3,300	6,209	5,475	8,675	71,355
Aug. 30.....	4,882	26,732	30,632	2,363	10,016	4,139	5,896	84,660
Sept. 6.....	8,265	31,739	34,216	1,364	5,946	2,777	3,884	88,191
Sept. 13.....	12,504	26,348	24,111	2,711	3,581	1,420	5,208	75,883
Sept. 20.....	6,654	18,965	19,654	511	5,669	6,155	79	57,687
Sept. 27.....	9,582	18,143	15,587	2,824	3,768	4,902	799	55,605
Oct. 4.....	7,181	9,429	14,358	1,080	6,315	3,686	3,448	45,497
Oct. 11.....	9,487	15,568	7,099	....	3,227	2,337	489	38,207
Oct. 18.....	9,863	24,711	9,854	....	2,507	659	986	48,580
Oct. 25.....	9,347	14,038	10,749	....	4,234	....	825	39,193
Nov. 1.....	7,793	20,127	13,967	....	22,999	....	447	55,333
Nov. 8.....	5,193	14,510	9,443	....	18,255	....	....	47,401
Nov. 15.....	7,953	10,740	2,299	....	22,202	....	....	43,194
Nov. 22.....	8,303	11,815	4,234	....	18,805	2,366	2,853	48,376
Nov. 29.....	6,910	21,612	10,330	....	11,002	2,366	2,853	55,073
Dec. 6.....	5,859	15,382	13,900	....	5,232	2,366	5,149	47,888
Dec. 13.....	4,973	10,786	7,003	....	70	6,168	1,013	30,013
Dec. 20.....	1,290	9,439	827	....	69	6,168	....	17,793
Dec. 27.....	105	10,675	....	....	69	4,758	....	15,607
Dec. 31.....	....	10,522	....	....	53	3,821	191	14,587

Table 3 shows what percentage of the total raw stocks was held at each port at the beginning of each month, both in 1918 and 1919. It will be noted that there is slight uniformity for individual ports, but a comparison of the totals for the Eastern, Southern and Western ports verifies the usual assumption that the Eastern ports have, at nearly all times, by far the largest

TABLE 3.

Percentage of Total Raw Stock at Each Port at Beginning of Each Month, 1918 and 1919

Month	Boston	New York	Philadelphia	Total Eastern Ports	Savannah	New Orleans	Galveston	Total Southern Ports	San Francisco	Total All Ports
1918										
January	1.8	11.5	....	13.3	....	19.0	....	19.0	67.7	100.0
February	5.5	33.3	18.2	57.0	0.2	29.4	....	29.6	13.4	100.0
March	11.2	32.4	13.9	57.5	8.1	13.9	....	22.0	20.5	100.0
April	7.8	26.3	10.9	45.0	14.3	14.2	3.8	32.3	22.7	100.0
May	9.5	21.8	13.5	44.8	4.3	21.1	0.5	25.9	29.3	100.0
June	7.8	29.3	18.7	55.8	0.3	30.7	4.8	35.8	8.4	100.0
July	9.1	27.3	22.1	58.5	1.6	29.6	2.0	33.2	8.3	100.0
August	6.1	14.1	27.3	47.5	2.3	32.0	2.6	36.9	15.6	100.0
September	10.8	14.9	22.5	48.2	2.2	22.7	2.2	27.1	24.7	100.0
October	22.0	31.6	9.8	63.4	1.7	2.4	3.3	7.4	29.2	100.0
November	13.5	32.6	30.4	76.5	....	0.2	2.6	2.8	20.7	100.0
December	13.2	36.7	25.1	75.0	4.1	5.8	....	9.9	15.1	100.0
1919										
January	4.4	43.8	4.4	52.6	9.7	....	....	9.7	37.7	100.0
February	4.0	20.8	15.9	40.7	....	14.0	0.2	14.2	45.1	100.0
March	9.9	35.2	11.4	56.5	2.0	10.6	2.0	14.6	28.9	100.0
April	9.3	26.6	15.4	51.3	1.6	13.3	2.3	17.2	31.5	100.0
May	9.0	25.5	22.5	57.0	2.3	14.5	0.5	17.3	25.7	100.0
June	10.1	28.1	17.2	55.4	2.8	18.1	1.2	22.1	22.5	100.0
July	5.5	23.5	13.6	42.6	3.0	23.4	2.5	28.9	28.5	100.0
August	4.0	29.7	11.3	45.0	3.2	21.9	8.2	33.3	21.7	100.0
September	9.4	36.0	38.8	84.2	1.5	6.7	3.2	11.4	4.4	100.0
October	15.8	20.7	31.6	68.1	2.4	13.9	8.1	24.4	7.5	100.0
November	14.1	36.4	25.2	75.7	....	23.5	....	23.5	0.8	100.0
December	12.2	32.1	29.0	73.3	....	10.9	5.0	15.9	10.8	100.0

proportion of the total, although the Southern ports and San Francisco combined, even if New Orleans is eliminated, have at various times a significant proportion of the total stocks.

In addition to stocks of raw sugars, refiners always have on hand considerable quantities of refined sugar. Table 4 shows their stocks of refined sugar at different dates from October 1, 1917, to December 31, 1919. Up to April 1, 1919, these figures were obtained by the Statistical Department of the International Sugar Committee from refiners usually at quarterly intervals. After April 1, 1919, these figures were obtained monthly by the Statistical Department of the United States Sugar Equalization Board. The License Division of the Food Administration at Washington also obtained monthly reports of stock on hand at refineries for the period November, 1917—April, 1918. In Table 4, below, the figures, as compiled from these various sources, are presented.

TABLE 4
Refiners' Stocks of Refined Sugar
 (Long Tons)

Date	Stocks at San Francisco	Stocks at Atlantic and Gulf Ports	Total Stocks of Refined
1917			
October 1.....	30,041	83,706	113,747
November 1*.....	14,225	13,075	27,300
December 1*.....	17,202	9,110	26,312
1918			
January 1.....	19,326	12,120	31,446
February 1*.....	10,214	28,293	38,507
March 1*.....	12,212	19,977	32,189
April 1.....	17,832	38,705	56,537
June 1.....	10,829	50,309	61,138
July 1.....	5,879	34,725	40,604
October 1.....	19,549	62,693	82,242
1919			
January 1.....	20,244	27,493	47,737
April 1.....	36,328	119,740	156,068
May 1.....	39,874	83,505	123,379
June 1.....	15,456	95,059	110,515
July 1.....	8,120	51,863	59,983
August 1.....	5,823	29,951	35,774
September 1.....	7,753	23,127	30,880
October 1.....	6,399	32,641	39,040
November 1.....	10,338	58,361	68,699
December 1.....	338	56,937	57,275
December 31.....	5	38,675	38,680

In 1918 stocks of refined were rather low throughout the year, the highest point being 82,242 tons on October 1, which represented only about eight days' consumption requirements for the whole country. There was a remarkable reduction in supplies between June 1 and July 1, a decline from 61,138 tons to 40,604 tons, reflecting the increased deliveries for consumption in this month. But from 40,604 tons on July 1, stocks increased to the highest point of the year, 82,242 tons on October 1, an increase of over 100 per cent. This increase was the direct result of the operations of the "certificate plan" of sugar distribution, initiated on July 1, 1918, by the Food Administration, through which consumption in the United States was reduced and stocks of refiners and dealers "mobilized" to meet war exigencies.

In 1919, in spite of the removal of all sumptuary restrictions by the Food Administration, refined stocks mounted to 156,068 tons by April 1, almost twice the highest point of 1918. This was due to the dull market in refined sugar at that time. But there was a swift and continuous decline, however, from this point on until October 1, when restrictions on consumption imposed by the United States Sugar Equalization Board because of the shortage conditions then obtaining in the country checked the downward movement. At the highest point on April 1, 1919, refined stocks were equal to fifteen and one-half days' supply for the country, but at the low level on September 1, only a three days' supply was on hand. In relation to the regional distribution of the stocks the table shows that, except for the period of acute shortage in the Eastern part of the United States in the last quarter of 1917, refined stocks at Atlantic and Gulf ports were much in excess of the stocks at San Francisco.

Table 5 shows the refiners' combined stocks of raw and refined sugars for the dates when both sets of figures were available. In order to make the addition of the raw and refined possible, the raw sugars have been converted to a refined basis, by allowing for about seven per cent. loss in melting. It will be noted that while the refined stocks were quite large on several

*These figures from the reports of refiners to the License Division of the Food Administration. All other figures from International Sugar Committee for 1917 and 1918, and for 1919 from United States Sugar Equalization Board.

dates they never mounted to the high levels reached by the raw stocks at various times. On the other hand, while refined stocks never fell below 30,000 tons, raw stocks were only 9,537 tons on January 1, 1918, and 18,522 tons on January 1, 1919.

TABLE 5
Refiners' Stocks of Raw and Refined Sugars Combined
(Long Tons)

Date	Stocks of Raw Sugar Expressed As Refined*	Stock of Refined Sugar	Total, All Stocks of Refiners
1917			
October 1.....	64,313	113,747	178,060
1918			
January 1.....	9,537	31,446	40,983
February 1.....	22,249	38,507	60,756
March 1.....	47,863	32,189	80,052
April 1.....	55,937	56,537	112,474
June 1.....	135,658	61,138	196,796
July 1.....	145,004	40,604	185,608
October 1.....	42,576	82,242	124,818
1919			
January 1.....	18,522	47,737	66,259
April 1.....	99,407	156,068	255,475
May 1.....	172,343	123,379	295,722
June 1.....	187,210	110,515	297,725
July 1.....	141,074	59,983	201,057
August 1.....	107,267	35,774	143,041
September 1.....	79,655	30,880	110,535
October 1.....	51,749	39,040	90,789
November 1.....	51,459	68,699	120,158
December 1.....	51,217	57,275	108,492
December 31.....	13,566	38,680	52,246

The highest points reached in the two years for the combined raw and refined stocks, 196,796 tons on June 1, 1918, and 297,725 tons on June 1, 1919, represent respectively about nineteen and one-half days' and twenty-nine and one-half days' requirements for the entire country's consumption. On January 1, 1918, when the lowest point was reached, the refiners' stocks were only equal to four days' consumption requirements. Thus, refiners' stocks in 1918 represented at various times anywhere from four to nineteen and one-half days' supplies for the country, while in 1919 these stocks ranged from six and one-half days' to about a month's requirements.

Beet Sugar Stocks

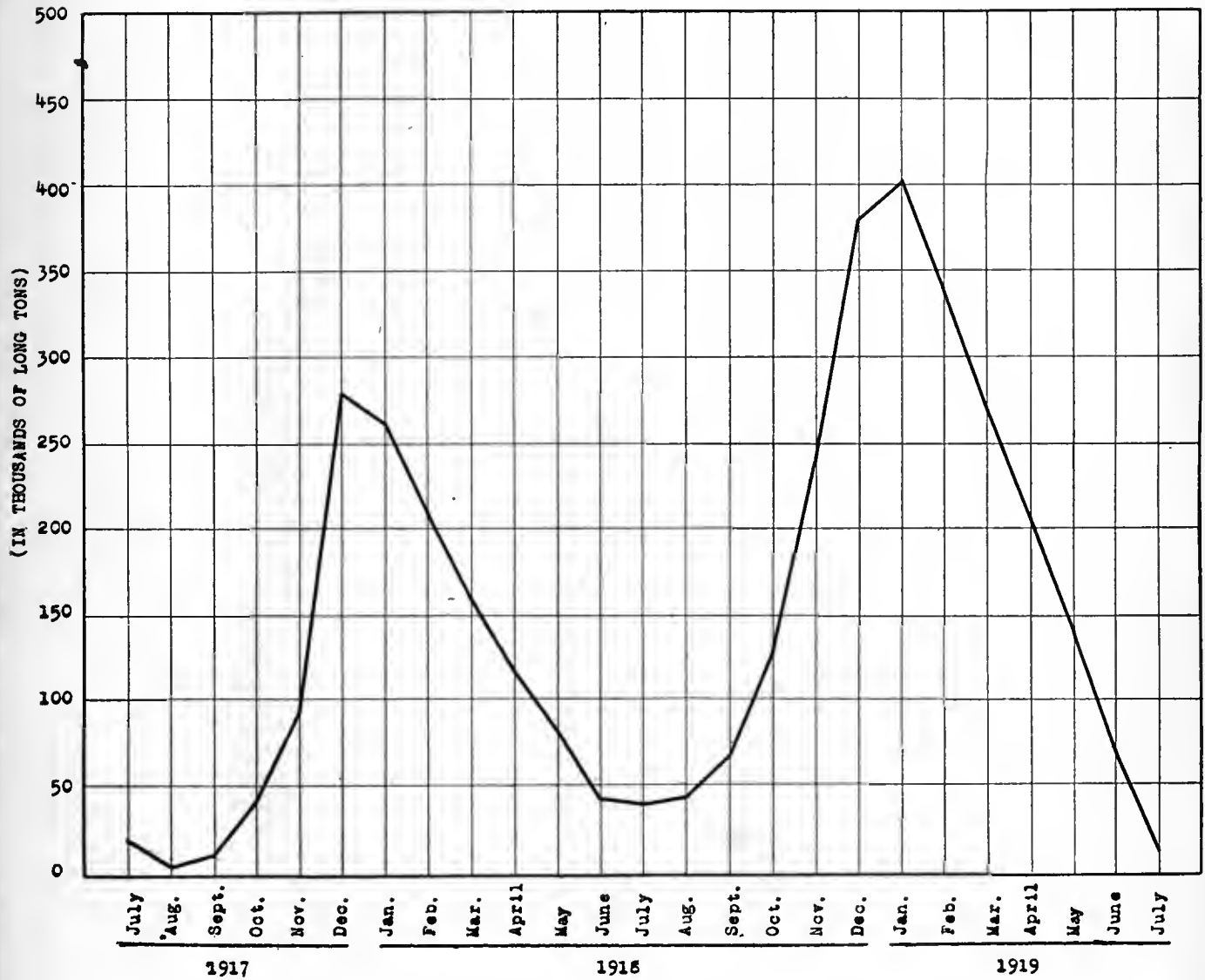
Table 6 shows the stocks of beet sugar at the end of each month for the period from July, 1917, to July, 1919, when the beet sugar distribution was directly under government control through the agency of the Food Administration Beet Sugar Distributing Committee at Chicago. This Committee issued monthly statements of the distribution of beet sugar. By utilizing these reports and the Department of Agriculture's estimate of the crop, it was possible to calculate the stocks on hand each month. For the months January through June, accurate figures were thereby made available, but there was an element of estimate in the figures for July through December owing to the fact that during this period both the old crop and new crop sugars were distributed simultaneously. (See Diagram 2.)

The stocks of beet sugar, as the table below indicates, varied inversely in relation to cane refiners' stocks, since they were largest at the beginning and end of the year when cane sugar stocks were lowest, and were smallest during the summer months, when stocks of refiners were highest. It is striking to observe the effect of the Food Administration regulations on the beet sugar stocks. For example, the certificate plan of distribution, which restricted consumption from July through November, 1918, brought stocks of beet sugar to the high level of 400,304 tons on January 31, 1919, as against 262,694 tons on January 31, 1918. The maximum beet sugar

*93 per cent. of the raw—there is a loss of 7 per cent. in refining.



DIAGRAM 2—STOCKS AT BEET SUGAR FACTORIES AT THE END OF EACH MONTH.



stocks reported in the period from July, 1917, to July, 1919 (400,304 tons on January 1, 1919), represented about forty days' consumption requirements for the country, while the lowest point ever reached was in August, 1917, when stocks were only 5,000 tons, or one-half of a day's requirements. The range in 1918 was from a minimum of about four days' supply to a maximum of about thirty-eight days' supply.

TABLE 6
*Stocks at Beet Sugar Factories at the End of
Each Month*

Month	Amount, Long Tons
1917	
July	20,000
August	5,000
September	10,000
October	43,000
November	89,000
December	281,370
1918	
January	262,694
February	209,253
March	160,257
April	117,139
May	82,923
June	42,769
July	39,000
August	42,000
September	68,000
October	136,000
November	241,000
December	380,000
1919	
January	400,304
February	340,726
March	268,100
April	206,145
May	139,610
June	70,795
July	13,350

*Stocks of Wholesalers**

Statistics of wholesalers' stocks of sugar are available from two different sources: first, the Food Surveys of the Department of Agriculture; second, the records of the License Division of the Food Administration. By combining these two sources of information, there results a rather complete statistical record of wholesalers' stocks for the period August 31, 1916-June 1, 1919. Table 7 shows the stocks of wholesalers for each date for which figures are available. Since the number of firms reporting for the different dates varies, accurate comparison is not possible by the total amounts, but by the figures of average holdings per firm. (See Diagram 3.)

The table shows an upward trend for wholesalers' stocks of sugar from January to August. The maximum stocks reported in 1917 were 140,779 tons, or 48.93 tons per firm (on August 1) and in 1918, 142,346 tons, or 39.67 tons per firm—also on August 1. There was a continuous decline from August 1 on; the lowest point in 1917 was reached on December 31, when stocks were 40,239 tons, or 11.06 short tons per firm, but the lowest point in 1918 was reached on February 1, when stocks were 32,104 tons, or 10.49 tons per firm. The abrupt increase in stocks from July 1 to August 1 in both years undoubtedly reflects the effort of the trade to stock up in anticipation of the heavy canning and preserving requirements of the fall months. The certificate scheme of distribution of the Food Administration, effective from July 1 to December 1, 1918, seems to

* Wholesalers' stocks are always given in pounds or short tons, unlike the refiners' figures, which are usually in long tons.

TABLE 7
*Sugar Stocks of Wholesalers in the United States**

Date	No. of Firms Reporting	Stocks Held on Each Date (Short Tons)	Average Stock Per Firm† (Short Tons)
1916—August 31	2,787	83,481	29.95
1917—January 1	3,277	60,735	18.53
May 1	2,289	85,358	37.29
June 1	2,853	114,447	40.08
July 1	3,155	109,409	34.67
August 1	2,877	140,779	48.93
September 1	2,815	102,504	36.55
October 1	2,774	68,986	24.86
November 1	2,653	34,867	13.14
December 1	2,423	34,578	14.27
1918—January 1	3,638	40,239	11.06
February 1	3,059	32,104	10.49
March 1	3,700	95,011	25.67
April 1	3,763	81,236	21.58
May 1	2,805	93,679	33.40
June 1	3,569	118,596	33.22
July 1	3,846	101,072	26.27
August 1	3,588	142,346	39.67
September 1	3,558	127,736	35.90
October 1	3,539	95,115	26.87
November 1	3,344	74,035	22.14
December 1	2,962	56,452	19.06
1919—January 1	2,492	54,343	21.81
February 1	2,634	60,920	23.13
March 1	2,850	86,073	30.20
April 1	2,681	84,609	31.56
May 1	2,820	83,900	29.75
June 1	2,718	103,811	38.19

have prevented the reduction of wholesalers' stocks to the low level of December, 1918, and the device of "interim certificates"‡ was no doubt responsible for this improvement. Otherwise, however, the variations in wholesalers' stocks under rigid government control in 1918 were not far different from 1917, which was a year of partial government control.

* Data obtained from the Food Surveys of the Department of Agriculture, Vol. I, Nos. 3, 6, 8; Vol. II, Nos. 1, 2, 7, 9, 13, 14, 15; from Circular No. 96 of the U. S. Department of Agriculture—"Sugar Supply of the United States," and from files of the License Division of the Food Administration.

† The use of the figures of stocks per firm may be questioned as a basis for interpretative discussion, because the smaller the number of firms considered, the greater the likelihood that the larger scale firms only have been considered. A check is possible on this point, because most of the "Surveys" give figures both for the larger number of firms which reported their stocks for 1918 only, and for the smaller number of firms which reported stocks for both 1918 and 1917, for each date. The following table showing the average stocks per firm on each date both for the larger and smaller group of firms, demonstrates that there is a slight difference between the two sets of figures which is negligible for most purposes:

Date	Results From Larger Group of Firms		Results From Smaller Group of Firms	
	No. Reporting	Average Per Firm (Short Tons)	No. Reporting	Average Per Firm (Short Tons)
1918				
January 1	3,638	11.06	3,277	11.22
May 1	2,805	33.40	2,289	34.94
June 1	3,569	33.22	2,853	35.16
July 1	3,846	26.27	3,155	26.20
August 1	3,588	39.67	2,877	40.68
September 1	3,558	35.90	2,815	38.10
October 1	3,539	26.87	2,774	29.22
November 1	3,344	22.14	2,653	23.45
December 1	2,962	19.06	2,423	19.85

‡ These interim certificates were employed to provide for a reserve stock in the hands of jobbers and dealers. All other certificates provided for the consumers' requirements.

Table 8 gives the comparative figures of wholesalers' stocks for the firms which reported for both years, 1918 and 1917. Here the total amounts are comparable for each date, since the same number of firms reported for both years. The table shows that wholesalers' stocks on January 1, 1918, were but 60.6 per cent. of the stocks on January 1, 1917. All through the year 1918 there was a steady improvement as compared with 1917 (with the single exception of the decline on July 1) so that by November 1, stocks were 178.4 per cent. of what they were on the corresponding date of 1917. This large increase shown for 1918 resulted from the operations of the certificate scheme of sugar distribution, which prevented wholesalers' stocks from being depleted too rapidly, while in the corresponding period in 1917 the sugar shortage which developed in the last quarter of the year diminished stocks at an abnormal rate. Owing to the removal of many of the restrictions on sugar consumption on November 1 and the reduced meltings by refineries after that date, wholesalers' stocks on December 1, 1918, went down to 139.1 per cent. of the condition on December 1, 1917, a sharp decline from the preceding month but a large increase as compared with the corresponding date of the year before. Thus the year began with an unfavorable showing, but ended with a distinctly favorable situation, owing to the rigid control by the Food Administration of distribution and consumption.

In terms of the entire country's requirements for consumption, wholesalers' stocks as reported both in 1917 and 1918 ranged from a little over three days' supplies to about fourteen days' supplies.

TABLE 8
Comparative Figures of Wholesalers' Stocks of Sugar for Firms Reporting for Both Years 1918 and 1917

Date	No. of Firms Reporting	Stocks of All Wholesalers, 1918 (Short Tons)	Stocks of All Wholesalers, 1917 (Short Tons)	Ratio of 1918 Stocks to 1917 Stocks (Per Cent.)
January 1	3,277	36,788	60,735	60.6
May 1	2,289	79,986	85,358	93.7
June 1	2,853	100,336	114,447	87.7
July 1	3,155	82,868	109,409	75.7
August 1	2,877	117,051	140,779	83.1
September 1	2,815	107,279	102,904	104.3
October 1	2,774	81,073	68,986	117.5
November 1	2,653	62,200	34,867	178.4
December 1	2,423	48,089	34,578	139.1

Table 9 gives the corresponding data for firms reporting for both the years 1919 and 1918. It is to be noted that dealers did not stock up as heavily after March 1 in 1919, as they did in 1918, and this failure to anticipate requirements probably accounts in no small measure for the scarcity of sugar in the latter part of 1919.

TABLE 9
Comparative Figures of Wholesalers' Stocks of Sugar for Firms Reporting for Both Years, 1919 and 1918

Date	No. of Firms Reporting 1919 and 1918	Stocks of All Wholesalers, 1919 (Short Tons)	Stocks of All Wholesalers, 1918 (Short Tons)	Ratio of 1919 Stocks to 1918 Stocks (Per Cent.)
January 1	2,627	38,934	32,549	119.6
February 1	2,500	33,388	29,557	113.0
March 1	2,710	55,090	37,830	145.6
April 1	2,561	57,853	57,669	100.3
May 1	2,681	56,381	86,627	65.1
June 1	2,590	61,120	88,082	69.4

Table 10 shows the various grades of sugar held in stock on various dates as reported by dealers to the License Division of the Food Administration. As was to be anticipated, granulated and soft sugars composed by far the bulk of the wholesalers' stocks, while cube and tablet sugars were relatively negligible.

TABLE 10

Amount of Various Grades of Sugar as Reported by Wholesalers to the License Division of the Food Administration.

Date	Stocks of Granulated and Soft Sugars		Stocks of Cube and Tablet Sugar		Miscellaneous Stocks		Total, All Kinds, Amount (Short Tons)
	Firms Reporting	Amount (Short Tons)	Firms Reporting	Amount (Short Tons)	Firms Reporting	Amount (Short Tons)	
Jan. 1, 1918.....	2,622	31,723	766	526	407	4,666	36,915
Feb. 1, 1918.....	3,059	29,538	994	1,883	100	682	32,105
Mar. 1, 1918.....	3,700	93,354	1,405	1,571	23	85	95,010
Apr. 1, 1918.....	3,763	78,001	1,626	3,196	12	38	81,235

Table 11 shows the stocks of wholesalers by geographic divisions on various dates from August 1, 1916, to June 1, 1919. It will be noted that the East North Central States generally have the heaviest stocks, while the West North Central States and the Middle Atlantic States follow closely. The Pacific States and Mountain States, though large producers of beet sugar have relatively small wholesalers' stocks. As might have been expected, the figures indicate that the wholesalers' stocks vary more with the density of population than in relation to the magnitude of sugar production in the various regions.

It is interesting to interpret these figures in terms of the sugar requirements of these various regions. The low point in wholesalers' stocks for most of these regions came on February 1, 1918, when, for the New England section, only about one-half a day's supply was reported, one day's supply for the Middle Atlantic region, three days' supply for the East North Central region, and four days' supply for the West North Central region. The South Atlantic States had the lowest point a month earlier, on January 1, 1918, when supplies were reported sufficient for but one day's consumption of this region. The minimum stocks for the East South Central region on January 1, 1919, were also only about a day's supply, while the stocks in the West South Central region and the Pacific States fell to their minimum points on July 1, 1918, with two days' supplies and three and one-half days' supplies respectively.

On September 1, 1918, maximum wholesalers' stocks were reported for the East North Central region, the amount then on hand being sufficient for 24 days' requirements for the states included in this territory. A year prior to this date, on September 1, 1917, wholesalers in the Pacific region had supplies on hand for fifteen days and the Middle Atlantic region had twelve days' requirements. Both the New England and the West South Central regions reached the maximum point on March 1, 1919, when stocks equalled eight and fourteen days' supplies respectively, while the West North Central region did not attain its highest level until June 1, 1919, with a stock ample for twenty-six days' requirements for this territory. On February 1, 1919, with a maximum of only 13,580,752 pounds reported, the Mountain region had twenty-one days' supplies on hand, owing to the small requirements of this territory, but the East South Central States, with maximum stocks of 16,877,795 pounds on April 1, 1918, had only eight days' supplies on hand, owing to the larger needs of this territory. The maximum stocks reported for the South Atlantic States on August 1, 1918, were sufficient for about eleven days' consumption of this division of the country.

TABLE
Stocks of Wholesalers
 (Compiled from Food Surveys of

Date	New England		Middle Atlantic		E. N. Central		W. N. Central	
	Pounds	Firms Reporting	Pounds	Firms Reporting	Pounds	Firms Reporting	Pounds	Firms Reporting
1916 Aug. 1.....	3,569,525	*	22,390,197	*	46,874,752	*	38,450,169	*
1917 Jan. 1.....	3,142,687	*	15,291,602	*	35,361,273	*	30,550,275	*
1917 May 1.....	3,660,503	139	25,993,749	404	50,222,022	357	28,375,971	187
1917 June 1.....	4,909,874	164	31,420,575	464	68,468,047	444	50,337,309	250
1917 July 1.....	4,739,655	148	29,503,986	458	50,462,186	370	36,404,738	212
1917 Aug. 1.....	6,924,117	186	53,072,633	532	78,465,760	457	45,967,265	271
1917 Sept. 1.....	4,853,094	180	54,172,990	528	77,903,473	462	44,812,505	276
1917 Oct. 1.....	4,490,941	177	41,570,675	498	49,663,034	450	27,480,505	275
1917 Nov. 1.....	8,384,639	188	34,560,349	427	21,719,594	437	12,853,905	296
1917 Dec. 1.....	1,609,736	157	40,602,123	444	18,949,679	412	17,393,631	268
1918 Jan. 1.....	980,409	*	5,986,399	*	20,203,234	*	18,077,908	*
1918 Feb. 1.....	904,737	*	5,746,584	*	12,333,722	*	11,354,104	*
1918 Mar. 1.....	1,436,266	*	8,670,729	*	14,776,054	*	12,150,022	*
1918 Apr. 1.....	3,926,725	*	26,443,350	*	42,857,833	*	33,917,920	*
1918 May 1.....	2,955,942	139	21,866,149	404	54,058,253	357	39,415,367	187
1918 June 1.....	4,479,768	164	27,947,070	464	84,596,658	444	36,756,770	250
1918 July 1.....	3,100,500	148	23,867,910	458	51,269,612	370	27,440,718	212
1918 Aug. 1.....	11,036,935	186	40,193,206	532	101,308,263	457	45,730,624	271
1918 Sept. 1.....	7,518,862	180	34,802,952	528	103,944,039	462	45,186,330	276
1918 Oct. 1.....	5,269,196	177	41,328,121	498	65,037,922	450	33,604,840	275
1918 Nov. 1.....	6,499,830	188	18,246,615	427	50,638,102	437	30,944,361	296
1918 Dec. 1.....	3,145,452	157	20,206,880	444	35,639,418	412	25,219,405	268
1919 Jan. 1.....	3,647,320	165	14,799,106	462	28,232,871	411	28,242,622	259
1919 Feb. 1.....	8,906,602	174	11,715,484	487	38,246,748	422	22,387,958	275
1919 Mar. 1.....	13,870,316	170	15,338,444	471	45,163,827	433	30,952,290	289
1919 Apr. 1.....	4,048,513	157	19,420,450	451	53,084,797	413	31,300,976	262
1919 May 1.....	4,041,616	181	19,057,519	462	57,072,112	433	30,108,406	277
1919 June 1.....	5,472,289	173	19,078,033	455	58,146,538	419	75,283,687	273

*Not reported.

† The States included in these geographical divisions are as follows:

New England—	Middle Atlantic—	Indiana.	Iowa.	South Atlantic—
Maine.	New York.	Illinois.	Missouri.	Delaware.
New Hampshire.	New Jersey.	Michigan.	North Dakota.	Maryland.
Vermont.	Pennsylvania.	Wisconsin.	South Dakota.	District of Columbia.
Massachusetts.	East North Central—	West North Central—	Nebraska.	Virginia.
Rhode Island.	Ohio.	Minnesota.	Kansas.	West Virginia.
Connecticut.				

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by *Geographical Divisions*†
the Department of Agriculture)

South Atlantic		E. S. Central		W. S. Central		Mountain States		Pacific States	
Pounds	Firms Reporting	Pounds	Firms Reporting	Pounds	Firms Reporting	Pounds	Firms Reporting	Pounds	Firms Reporting
14,872,136	*	8,730,631	*	15,643,054	*	6,710,063	*	9,721,302	*
15,474,150	*	8,978,085	*	25,328,688	*	11,724,393	*	6,496,533	*
14,155,508	523	7,250,665	196	26,203,066	298	6,793,499	97	8,062,477	88
17,034,594	630	11,506,823	276	26,387,181	363	8,786,860	148	10,043,246	114
14,452,153	545	12,255,277	258	14,281,754	319	6,282,966	114	6,233,291	76
11,135,570	634	14,523,698	286	22,578,270	376	8,321,745	185	13,582,979	119
22,342,898	620	12,729,130	279	19,012,944	351	10,878,549	159	16,232,990	122
21,690,632	602	8,214,133	285	14,087,734	357	8,731,333	162	8,269,359	113
8,327,431	558	4,370,285	276	7,852,230	336	7,438,822	172	10,030,655	125
4,842,361	464	2,825,969	231	8,079,034	292	7,277,172	158	7,482,385	119
3,254,971	*	3,947,110	*	13,594,548	*	10,373,628	*	8,755,616	*
3,317,203	*	5,945,365	*	13,236,618	*	6,509,446	*	6,804,206	*
6,915,295	*	8,680,399	*	17,215,755	*	7,097,337	*	4,899,085	*
17,044,805	*	16,877,795	*	20,705,549	*	6,989,298	*	7,574,510	*
12,268,416	523	6,435,883	196	11,717,561	298	4,544,423	97	6,710,454	88
15,794,711	630	6,578,080	276	10,599,779	363	5,653,445	148	8,265,671	114
10,109,062	545	5,892,410	258	4,104,349	319	5,975,420	114	3,785,199	76
32,338,849	634	10,876,023	286	19,825,844	376	6,207,307	185	10,953,165	119
22,101,400	620	10,709,772	279	20,702,888	351	5,001,676	159	12,760,322	122
13,546,880	602	8,904,284	285	15,562,836	357	5,650,431	162	6,127,954	113
13,299,527	558	8,806,351	276	11,914,747	336	5,904,581	172	8,298,149	125
13,953,440	464	4,809,851	231	15,057,236	292	10,180,944	158	8,121,213	119
9,074,157	427	2,940,794	227	5,082,864	291	9,173,344	136	7,494,753	114
5,377,616	435	4,130,340	230	10,042,038	347	13,580,752	142	7,452,572	122
17,156,999	573	8,470,653	267	26,925,405	370	8,372,514	151	5,897,049	126
17,384,553	538	9,369,431	254	20,989,865	350	5,778,074	142	7,834,525	124
13,384,526	552	9,339,859	262	17,075,115	380	9,089,650	147	8,632,408	126
11,172,840	555	7,953,600	242	15,501,287	343	6,973,886	141	8,040,077	117

North Carolina.
South Carolina.
Georgia.
Florida.
East South Central—
Kentucky.

Tennessee.
Alabama.
Mississippi.
West South Central.
Arkansas.
Louisiana.

Oklahoma.
Texas.
Mountain—
Montana.
Idaho.
Wyoming.

Colorado.
New Mexico.
Arizona.
Utah.
Nevada.

Pacific—
Washington.
Oregon.
California.

TABLE
Wholesalers' Stocks
(Figures)

States and Geographical Divisions.	August 31, 1916	January 1, 1917	August 31, 1917	January 1, 1918
New England.....	3,569,525	3,142,687	3,469,223	980,409
Maine	497,582	344,205	410,074	89,543
New Hampshire.....	166,795	274,458	87,957	249,829
Vermont	234,260	202,137	220,585	114,042
Massachusetts	1,514,613	1,565,361	1,610,819	345,522
Rhode Island.....	143,855	135,883	257,623	69,669
Connecticut	1,012,420	620,643	882,165	111,804
Middle Atlantic.....	22,390,197	15,291,602	29,916,939	5,986,399
New York.....	9,935,461	6,713,121	13,397,639	3,031,295
New Jersey.....	711,894	1,151,657	946,202	486,071
Pennsylvania	11,742,842	7,426,824	15,573,098	2,469,033
East North Central.....	46,874,752	35,361,273	52,104,367	20,203,184
Ohio	9,404,271	7,117,633	14,366,003	2,113,672
Indiana	8,066,852	4,478,452	10,156,650	4,568,673
Illinois	18,919,274	10,051,770	15,838,855	9,667,883
Michigan	7,544,222	4,030,275	8,213,310	1,311,038
Wisconsin	2,940,133	9,683,143	3,529,549	2,541,918
West North Central.....	38,450,169	30,550,275	47,203,982	18,077,908
Minnesota	6,541,160	4,443,715	8,509,343	2,141,898
Iowa	10,080,118	7,572,944	14,456,301	4,718,228
Missouri	10,590,303	9,773,632	10,803,160	6,276,387
North Dakota.....	1,808,793	1,043,188	1,471,056	316,292
South Dakota.....	815,200	1,231,684	973,415	686,843
Nebraska	3,761,925	2,444,872	5,617,839	1,654,573
Kansas	4,852,670	4,040,240	5,372,868	2,283,687
South Atlantic.....	14,872,136	15,474,150	17,847,600	3,254,975
Delaware	79,233	111,156	85,241	7,337
Maryland	1,440,243	700,198	1,638,897	571,091
District of Columbia.....	105,385	441,784	193,252	315,839
Virginia	3,234,198	3,062,164	3,216,738	799,608
West Virginia.....	2,422,085	1,951,046	3,009,262	488,531
North Carolina.....	2,694,182	765,739	3,549,828	122,615
South Carolina.....	441,506	2,825,137	592,090	136,800
Georgia	2,528,525	3,061,237	3,625,346	397,939
Florida	1,926,779	2,555,689	1,936,946	415,215
East South Central.....	8,730,631	8,978,085	11,645,200	3,947,110
Kentucky	2,345,137	1,604,975	3,202,386	1,575,336
Tennessee	4,129,237	3,305,448	5,106,001	820,523
Alabama	1,424,681	2,140,654	2,024,995	472,654
Mississippi	831,576	1,927,008	1,311,818	1,078,597
West South Central.....	15,643,054	25,328,688	15,440,445	13,594,548
Arkansas	2,278,334	4,980,749	2,793,373	2,240,749
Louisiana	2,245,364	7,704,607	3,544,426	4,031,271
Oklahoma	5,767,591	3,202,342	3,254,380	1,589,493
Texas	5,351,765	9,440,990	5,848,266	5,733,035
Mountain	6,710,063	11,724,393	11,384,606	10,373,628
Montana	787,522	1,414,196	1,384,925	940,224
Idaho	1,016,073	1,217,274	3,552,911	1,105,312
Wyoming	302,189	255,209	744,721	515,007
Colorado	2,385,537	6,184,720	2,858,331	4,971,389
New Mexico.....	509,548	714,340	618,616	875,773
Arizona	361,662	600,186	542,668	703,440
Utah	1,231,134	1,283,404	1,606,212	1,121,020
Nevada	116,398	55,064	76,222	141,463
Pacific	9,721,302	6,496,533	18,386,317	8,755,616
Washington	2,355,750	2,582,633	4,328,530	3,930,143
Oregon	1,318,943	1,210,052	3,001,781	1,826,579
California	6,046,609	2,703,848	11,056,006	2,998,894
Grand Total.....	166,961,829	152,347,686	207,398,679	85,173,777

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of Sugar by States
in Pounds)

February 1, 1918	March 1, 1918	April 1, 1918	May 1, 1918	June 1, 1918	July 1, 1918
904,737	1,436,266	3,926,725	5,199,200	11,032,415	7,152,010
28,439	46,035	136,030	271,099	882,816	448,391
86,488	34,808	198,994	390,559	335,179	377,515
15,419	25,742	291,140	363,561	761,655	472,267
542,590	679,260	1,732,286	2,166,762	4,505,673	3,324,808
145,871	155,272	378,168	812,865	1,618,835	299,730
85,930	495,149	1,190,107	1,194,354	2,928,257	2,229,299
5,746,584	8,670,729	26,443,350	33,408,658	50,085,442	39,035,062
2,170,647	4,022,654	11,516,873	14,877,346	25,123,867	18,902,097
763,795	828,556	2,583,669	4,130,951	6,097,429	2,604,869
2,812,142	3,819,519	12,342,908	14,400,361	18,864,146	17,528,096
12,333,722	14,776,054	42,857,833	67,412,624	101,578,433	97,553,795
3,031,855	5,697,375	10,515,086	15,540,240	25,112,534	31,140,048
2,549,435	1,697,697	7,425,997	9,379,752	13,228,388	10,803,830
3,856,260	5,102,775	18,640,272	28,529,284	40,188,818	22,010,766
822,150	1,203,975	3,717,027	7,968,458	14,760,783	24,439,146
2,074,022	1,074,232	2,559,451	5,994,890	8,287,910	9,160,005
11,354,104	12,150,022	33,917,920	63,823,077	52,159,772	42,691,567
1,425,622	2,001,763	7,458,848	14,197,598	13,312,788	8,892,536
2,438,450	1,847,648	10,247,530	18,525,568	14,364,990	10,985,467
4,007,988	3,950,404	7,988,337	13,546,741	12,675,227	10,416,638
523,470	414,841	597,340	1,480,578	1,502,937	1,453,995
821,622	601,725	1,179,590	2,021,956	1,311,262	1,472,423
849,936	1,579,142	1,425,718	5,044,141	4,238,701	4,911,624
1,287,016	1,754,499	5,020,557	9,006,495	4,754,407	4,558,884
3,317,203	6,915,295	17,044,805	17,416,217	30,654,682	19,627,239
2,696	67,059	75,543	151,768	275,051	129,850
169,742	736,261	6,087,682	2,387,932	11,388,550	3,650,478
210,161	300,295	283,502	535,502	1,258,241	1,936,075
682,550	1,243,663	2,170,249	3,009,294	4,656,588	5,968,602
731,372	941,298	1,893,114	3,098,447	4,133,494	3,498,668
30,159	288,666	821,626	2,012,514	2,829,310	1,400,441
146,560	214,591	627,196	1,789,761	2,157,260	1,300,964
986,004	2,828,473	3,861,567	3,186,143	1,581,912	847,879
357,959	294,989	1,224,326	1,244,613	2,374,276	894,282
5,945,365	8,680,399	16,877,795	13,246,508	9,293,529	11,361,131
2,226,833	2,571,277	5,618,259	4,769,036	5,209,067	5,212,265
1,876,616	2,775,562	5,707,657	4,852,109	2,032,857	2,909,204
700,865	1,726,572	2,301,504	1,846,153	893,254	2,886,903
1,141,051	1,606,988	3,250,375	1,779,210	1,157,851	352,759
13,236,618	17,215,755	20,705,549	18,229,822	12,968,338	7,652,124
3,140,296	5,314,077	5,874,510	4,464,941	2,561,940	1,568,397
737,040	1,500,404	2,755,434	1,989,033	2,046,394	1,674,345
1,806,381	1,308,928	4,777,128	5,979,847	4,208,826	1,640,598
7,552,901	9,092,346	7,298,477	5,796,001	4,151,178	2,768,784
6,509,446	7,097,337	6,989,298	7,440,214	7,777,143	8,789,724
933,914	844,287	972,306	997,727	1,039,391	1,408,231
673,925	648,101	729,180	725,259	718,142	996,618
611,439	708,601	886,474	794,788	733,071	591,034
1,006,062	1,765,147	1,370,706	1,635,347	2,045,020	2,242,171
871,018	736,241	753,332	863,793	759,666	1,378,049
867,425	975,674	923,176	1,219,364	1,029,785	922,329
1,443,917	1,340,644	1,194,603	1,074,138	1,357,598	1,216,141
101,746	78,642	159,521	129,798	94,470	35,151
6,804,206	4,899,085	7,574,510	8,895,376	10,535,357	7,123,245
1,845,480	1,808,307	2,553,080	2,381,220	3,047,689	2,725,234
1,554,239	646,391	1,111,519	1,276,074	1,702,178	627,201
3,404,487	2,444,387	3,909,911	5,238,082	5,785,490	3,770,810
6,151,985	81,840,942	176,337,785	235,071,696	286,085,111	240,985,897

Table 12 above shows the wholesalers' stocks of sugar by states, as reported by the Food Surveys of the Department of Agriculture for August 31, 1916, January 1, 1917, August 31, 1917, January 1, 1918, and July 1, 1918; also the stocks as compiled from reports to the License Division of the Food Administration for the first of each month from February through June, 1918. By the combination of these two sources of information there results a complete monthly record of wholesalers' stocks by states for the months of January through July, 1918, as well as a record for sporadic dates from August 31, 1916, to January 1, 1918.

Table 13 shows the stocks of wholesalers in five large cities of the United States at the end of each month, as reported to the License Division of the Food Administration for the period January-May, 1918. The figures indicate a large increase of stocks in this period in each of the cities.

TABLE 13
Wholesalers' Stocks of Sugar in Various Cities of the United States, 1918
(Compiled from Reports to License Division of Food Administration)
(Pounds)

City	January	February	March	April	May
New York	1,275,006	2,663,858	5,334,296	5,710,493	10,884,792
Chicago	1,302,198	3,504,491	9,227,978	14,920,509	28,890,915
Philadelphia	636,749	474,028	3,010,734	3,251,407	3,423,323
St. Louis	1,649,292	1,731,146	3,354,771	3,088,009	3,636,635
Boston	355,541	301,208	660,745	828,096	1,445,406

It is significant to interpret these figures in terms of the supplies available for each inhabitant of these cities. For New York City, wholesalers' stocks ranged from a minimum of four ounces on January 31, 1918, to a maximum of $2\frac{1}{4}$ pounds per capita on May 31, 1918. For Chicago, wholesalers' stocks were sufficient for about $9\frac{1}{2}$ ounces per capita on January 31, but on May 31 the per capita supply was about $13\frac{1}{4}$ pounds, almost six times that of New York. For Philadelphia, minimum wholesalers' stocks were reported on February 3, when there were about 4.8 ounces for every inhabitant of the city, while the maximum stocks reported on May 31 were about $2\frac{1}{4}$ pounds per capita. St. Louis fared better than Philadelphia, with stocks ranging from 2.4 pounds to 5.3 pounds per capita, while wholesalers' stocks in Boston increased from about 7 ounces per capita on February 28 to somewhat over two pounds on May 31, 1918.

Retailers' Stocks

Table 14 gives the total retailers' stocks of sugar in the United States, as reported by the Food Surveys of the Department of Agriculture. These figures are not as complete as the figures

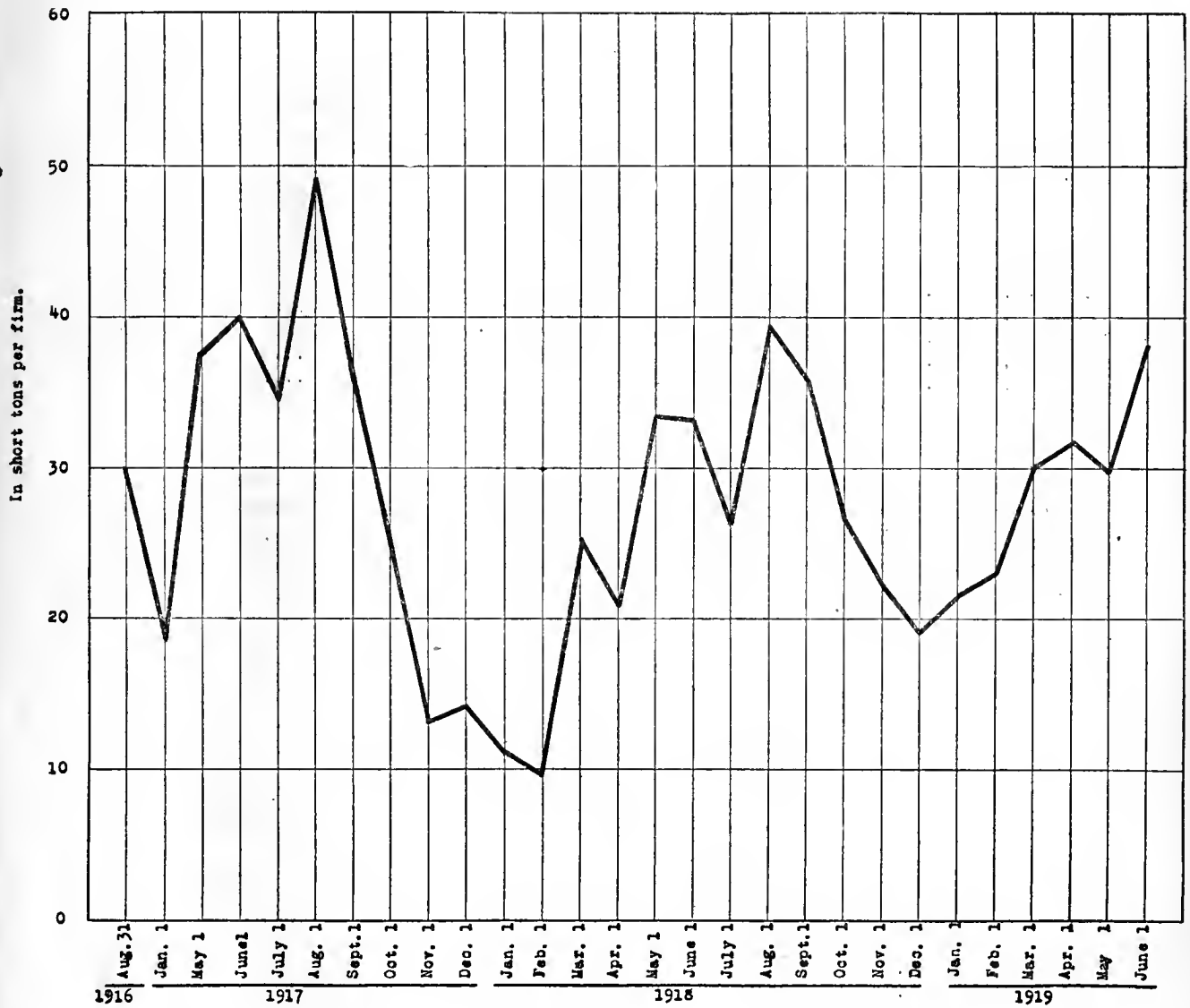
TABLE 14
Sugar Stocks of Retailers in the United States

Date	No. of Firms Reporting	Stocks Reported (Pounds)	Average Per Firm (Pounds)
Aug. 31, 1916....	47,620	96,855,176	2,033.9
Jan. 1, 1917....	130,723	122,242,169	935.1
July 1, 1917....	87,961	120,166,882	1,366.1
Aug. 31, 1917....	71,661	136,097,836	1,899.1
Jan. 1, 1918....	174,958	93,016,203	531.6
July 1, 1918....	132,479	133,403,998	1,006.9

for refiners or wholesalers, since the number of retail dealers who could be induced to report, could only be at best but a part of the total number in the United States, for there were 375,361 retail grocers in the United States* at the close of 1918. The largest number of retailers reported their stocks of sugar to the Department of Agriculture, on January 1, 1918, when replies were received from 174,958 retailers, or 46.6 per cent. of the total number in the United States.

* See Table 65 for number of retailers in every state.

DIAGRAM 3—SUGAR STOCKS OF WHOLESALERS IN THE UNITED STATES.
(Average Stocks Per Firm.)



The figures in Table 14 indicate that retailers' stocks per firm were somewhat lower on August 31, 1917, than on August 31, 1916, but on January 1, 1918, they were only about one-half of stocks on January 1, 1917. By July 1, 1918, retailers had apparently increased their stocks from the low point of January 1, 1918, so that they were then about three-quarters of the condition on July 1, 1917. The largest stocks of retailers reported in this period represented about six days' supply for the country, the minimum being about four days' supply.

TABLE
Sugar Stocks of Various

Date	Retail Grocers		General Stores		Chain Grocery Stores	
	Firms Reporting	Amount (Pounds)	Firms Reporting	Amount (Pounds)	Firms Reporting	Amount (Pounds)
Aug. 31, 1916..	*	34,384,134	*	38,426,087	*	23,061,772
Jan. 1, 1917..	74,714	62,666,023	54,619	58,964,259	....	†
Aug. 31, 1917..	42,867	60,124,331	26,148	49,310,625	797	24,447,244
Jan. 1, 1918..	102,095	38,744,256	70,429	53,807,294	....	†
July 1, 1918..	*	75,327,842	*	49,296,024	....	†

Table 15 segregates the retailers' stocks of sugar by various classes of business. Retail meat markets, flour and feed dealers, and the dealers grouped under the heading "other retail dealers" hold together but a negligible proportion of the total. Retail grocers carry the largest stocks, with the general stores following closely, but the general stores have larger stocks of sugar per unit than the retail grocers.

TABLE 16
Retailers' Stocks by Geographical Divisions
(Pounds)

Geographic Division	Aug. 31, 1916	Jan. 1, 1917	Aug. 31, 1917	Jan. 1, 1918	July 1, 1918
United States—					
Total	96,855,176	122,242,169	136,097,836	93,016,203	133,403,998
New England	5,085,319	7,654,138	10,018,368	1,781,456	12,569,872
Middle Atlantic ..	24,624,353	20,029,099	23,344,258	8,850,211	39,122,888
E. N. Central.....	21,393,815	24,649,200	27,679,298	18,284,252	29,918,794
W. N. Central....	11,335,273	19,521,048	18,461,738	16,310,107	18,126,967
South Atlantic....	11,040,424	10,479,850	13,915,525	6,230,978	11,196,982
E. S. Central.....	4,890,722	6,792,860	7,439,776	6,005,305	4,618,880
W. S. Central.....	6,713,787	16,552,205	13,746,585	16,200,362	5,498,268
Mountain	5,717,738	7,896,871	9,787,688	8,208,253	4,396,644
Pacific	6,053,745	8,666,898	11,704,600	11,145,279	7,954,703

* Not given. † Included in "other retail dealers."

Table 16 gives the stocks of retailers by geographic divisions of the country for various dates. The stocks in New England states reached a very low point on January 1, 1918, when they represented only about one day's supply for this territory. The highest stocks were on July 1, 1918, when there was a total of 12,569,872 pounds, equivalent to seven days' requirements for the New England section. Similar conditions prevailed in the Middle Atlantic, the South Atlantic, and East North Central regions, although there was not the same degree of exhaustion of

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Classes of Retailers

Retail Meat Markets		Retail Flour and Feed Dealers		Other Retail Dealers		Total Stocks of All Retailers
Firms Reporting	Amount (Pounds)	Firms Reporting	Amount (Pounds)	Firms Reporting	Amount (Pounds)	
*	566,775	*	416,408	*	*	96,855,176
....	†	....	†	1,380	611,887	122,242,169
*	945,285	463	1,270,351	*	*	136,097,836
....	†	....	†	2,434	464,653	93,016,203
....	†	....	†	*	8,780,132	133,403,998

supplies on January 1, 1918. The West North Central states, because of beet sugar production in this region, had practically even supplies for all dates except on August 31, 1916, when stocks on hand were equal to but four days' requirements for this territory. The four other regions had the lowest stocks on July 1, 1918. The maximum retailers' supplies reported were as follows in terms of each region's daily needs:

New England	8 days' supplies on March 1, 1919
Middle Atlantic	12 days' supplies on Sept. 1, 1917
E. N. Central.....	24 days' supplies on Sept. 1, 1918
W. N. Central.....	26 days' supplies on June 1, 1919
South Atlantic	11 days' supplies on Aug. 1, 1918
E. S. Central.....	8 days' supplies on Apr. 1, 1918
W. S. Central.....	14 days' supplies on March 1, 1919
Mountain	21 days' supplies on Feb. 1, 1919
Pacific	15 days' supplies on Sept. 1, 1917

Table 17 shows the stocks of retailers by individual states as reported for various dates. The lowest stocks ever reported for any state were the 35,093 pounds reported for Delaware on January 1, 1918, while the maximum stocks were 17,359,411 pounds for the state of Pennsylvania on July 1, 1918.

TABLE 17
Retailers' Stocks by States
(Pounds)

States	Aug. 31, 1916	Jan. 1, 1917	Aug. 31, 1917	Jan. 1, 1918	July 1, 1918
United States	96,855,176	122,242,169	136,097,836	93,016,203	133,403,998
New England	5,085,319	7,654,138	10,018,368	1,781,456	12,569,872
Maine	591,679	1,232,773	931,708	289,613	1,828,171
New Hampshire	374,431	716,706	764,502	84,090	902,263
Vermont	294,412	689,028	667,096	92,945	881,129
Massachusetts	2,857,326	2,844,291	5,103,538	626,696	4,390,884
Rhode Island	406,857	608,481	724,018	310,829	1,172,513
Connecticut	560,614	1,562,859	1,827,506	377,283	3,394,912
Middle Atlantic	24,624,353	20,029,099	23,344,258	8,850,211	39,122,888
New York	16,765,733	9,401,969	10,172,026	3,524,633	15,617,764
New Jersey	1,918,729	2,192,338	3,161,345	1,202,392	6,145,713
Pennsylvania	5,939,891	8,434,792	10,010,887	4,123,186	17,359,411
East North Central	21,393,815	24,649,200	27,679,298	18,284,252	29,918,794
Ohio	6,602,949	6,057,675	7,330,061	2,816,399	9,685,374
Indiana	2,982,291	3,009,958	3,940,366	1,975,793	4,159,920
Illinois	7,752,277	8,097,010	8,433,889	8,010,432	4,894,495
Michigan	2,425,768	4,265,939	4,538,172	2,490,862	7,547,826
Wisconsin	1,630,530	3,218,618	3,436,810	2,990,766	3,631,179
West North Central	11,335,273	19,521,048	18,461,738	16,310,107	18,126,967
Minnesota	1,544,358	3,429,692	2,659,989	2,777,913	3,706,251
Iowa	2,949,377	3,622,857	4,374,304	2,714,160	4,170,688
Missouri	2,238,913	4,808,114	3,683,567	4,283,378	3,812,111
North Dakota	622,604	1,378,615	1,095,365	1,293,114	1,477,386
South Dakota	735,961	1,205,982	1,411,225	1,121,046	923,343
Nebraska	1,991,986	2,279,076	3,047,937	1,650,336	1,682,203
Kansas	1,252,074	2,796,712	2,189,351	2,470,160	2,354,985
South Atlantic	11,040,424	10,479,850	13,915,525	6,230,978	11,196,982
Delaware	74,689	117,349	86,262	35,093	485,201
Maryland	2,052,960	899,174	2,343,912	447,784	2,087,352
District of Columbia	642,844	494,851	783,297	393,724	1,092,658
Virginia	2,317,119	1,816,664	2,326,336	1,804,051	1,984,580
West Virginia	1,105,647	2,316,237	2,090,675	806,272	2,696,520
North Carolina	1,294,151	1,291,490	1,815,797	753,650	1,140,487
South Carolina	1,215,767	1,238,378	1,662,631	637,988	566,315
Georgia	1,769,775	1,696,071	2,007,991	772,581	675,370
Florida	567,472	609,636	798,624	579,835	468,499
East South Central	4,890,722	6,792,860	7,439,776	6,005,305	4,618,880
Kentucky	1,828,170	2,572,018	2,682,282	1,622,059	1,658,755
Tennessee	1,473,297	1,201,843	2,197,699	1,149,035	1,173,122
Alabama	1,112,307	1,770,536	1,601,577	1,568,032	458,891
Mississippi	476,948	1,248,463	958,218	1,666,179	1,328,112
West South Central	6,713,787	16,552,205	13,746,585	16,200,362	5,498,268
Arkansas	642,563	2,011,637	1,319,930	1,652,628	771,357
Louisiana	1,308,817	3,726,503	3,183,312	6,447,083	1,337,541
Oklahoma	960,727	2,358,568	2,485,711	2,144,019	1,332,348
Texas	3,801,680	8,455,497	6,757,632	5,956,632	2,057,022
Mountain	5,717,738	7,896,871	9,787,688	8,208,253	4,396,644
Montana	1,145,853	2,266,388	2,083,541	1,515,581	731,674
Idaho	940,451	741,876	1,646,350	927,556	720,472
Wyoming	459,509	787,100	780,059	1,056,641	544,444
Colorado	1,406,773	1,532,187	2,230,573	1,430,534	990,893
New Mexico	608,074	759,169	1,067,774	854,830	353,196
Arizona	506,323	846,222	802,156	1,147,802	429,745
Utah	371,860	586,628	672,033	856,469	398,374
Nevada	278,895	377,301	505,202	418,840	227,846
Pacific	6,053,745	8,666,898	11,704,600	11,145,279	7,954,703
Washington	1,718,345	2,246,951	3,751,117	3,178,106	3,062,952
Oregon	1,324,295	1,466,996	2,883,619	3,439,147	1,541,684
California	3,011,105	4,952,951	5,069,864	4,528,026	3,350,067

Stocks of Various Classes of Businesses—Confectioners, Bakers, Brewers, Etc.

Table 18 gives the stocks of sugar in the hands of confectioners on various dates, as reported by the Department of Agriculture, in the Food Surveys. It will be noted that the stocks of confectioners were relatively negligible as compared with the stocks of classes of businesses shown above, for the largest stocks reported on any date did not quite equal two days' normal sugar supply of the United States.

TABLE 18
Stocks of Confectioners

Date	Firms Reporting	Amount Reported		Average Per Firm, Short Tons
		Pounds	Short Tons	
Aug. 31, 1916.....	....	22,418,755	11,209	....
Jan. 1, 1917.....	3,737	28,331,105	14,165	3.8
July 1, 1917.....	929	28,871,789	14,436	15.5
Aug. 31, 1917.....	1,527	32,347,673	16,174	10.6
Jan. 1, 1918.....	4,946	34,583,785	17,292	3.5
July 1, 1918.....	1,135	22,119,393	11,059	9.7
Jan. 1, 1919.....	830	17,136,953	8,568	10.3

Table 19 gives the stocks of sugar held by bakers in the United States as reported to the Department of Agriculture. It will be noted that bakers' stocks, like confectioners' stocks, are relatively small.

TABLE 19
Stocks of Bakers

Date	Firms Reporting	Amount Reported		Average Per Firm, Short Tons
		Pounds	Short Tons	
Aug. 31, 1916.....	....	18,066,555	9,033	....
Jan. 1, 1917.....	12,354	27,204,835	13,602	1.1
July 1, 1917.....	3,053	27,695,420	13,848	4.5
Aug. 31, 1917.....	11,707	30,713,081	15,357	1.3
Jan. 1, 1918.....	12,354	28,403,716	14,202	1.1
July 1, 1918.....	3,053	25,732,992	12,866	4.2
Jan. 1, 1919.....	3,549	15,533,214	7,767	2.2

Table 20 gives the stocks of sugar held by brewers, milk condenseries, canners, manufacturers of preserves and ice cream manufacturers. These figures are available for a few dates only, and are here presented to indicate the insignificance of these stocks in relation to the total stocks or consumption of the country. The general impression has been that these stocks are large.

TABLE 20
Stocks of Brewers, Ice Cream Manufacturers, Milk Condenseries, etc. (In short tons.)

Date	Brewers	Ice Cream Manufacturers	Milk Condenseries	Canners and Manufacturers of Preserves
Aug. 31, 1916.....	2,877	1,006	....	....
Jan. 1, 1917.....	....	....	1,658	....
July 1, 1917.....	3,106	....	1,980	9,901
Aug. 31, 1917.....	4,398	2,807	....	....
Jan. 1, 1918.....	....	....	4,108	....
July 1, 1918.....	2,974	....	4,489	10,112
Jan. 1, 1919.....	1,970	....	694	4,523

General Summary of Stocks in the United States

Table 21 summarizes the stocks of sugar in the United States by class of business, as reported by the Food Surveys of the Department of Agriculture, showing quantities and percentages. It will be noted that the total stocks of sugar reported for August 31, 1917, were much below those of August 31, 1916; further, that stocks on January 1 and July 1, 1918, were considerably below stocks on the corresponding dates of 1917. But by January 1, 1919, there was an improvement, stocks being 620,841 tons, as against 514,100 tons on January 1, 1918. This improvement in stocks, as already noted above, was the direct result of the operation of the certificate scheme of distribution, which restricted consumption and allowed an accumulation of stocks.

TABLE
Stocks of Sugar As Reported by "Food Surveys"
(Short

Class of Business	August 31, 1916		January 1, 1917		July 1, 1917	
	Amount	Per.Cent.	Amount	Per Cent.	Amount	Per Cent.
Total Stocks	715,330	100.00	908,637	100.00	507,949	100.00
Manufacturers	330,150	46.16	587,557	64.66	169,040	33.28
Cane .....	*	....	260,910	28.71	110,190	21.69
Beet .....	*	....	326,647	35.95	58,850	11.59
Warehouses	214,039	29.92	120,611	13.27	77,950	15.34
Wholesale Dealers	83,481	11.67	76,174	8.39	141,861	27.93
Retail Dealers	48,427	6.77	61,121	6.73	60,083	11.83
Sugar-Using Industries—						
Confectioners	11,209	1.57	14,166	1.56	14,436	2.84
Bakers	9,033	1.26	13,602	1.50	13,848	2.73
Ice Cream Freezers.....	1,006	.14	*	....	*	....
Brewers	2,877	.40	*	....	3,106	.61
Milk Condenseries .....	*	....	1,658	.18	1,980	.39
Canners .....	*	....	*	....	7,712	1.52
Preserve Manufacturers...	*	....	*	....	2,189	.43
Hotels and Restaurants.....	802	.11	*	....	*	....
Miscellaneous	14,306	2.00	33,748	3.71	15,744	3.10

The percentages reveal some interesting uniformities. Stocks of manufacturers (cane and beet) represented 46 per cent. of the total stocks in the country both on August 31, 1916, and August 31, 1917. Again, on January 1, both for 1917 and 1918, manufacturers' stocks represented about the same proportion of the total, 64.66 per cent. and 68.45 per cent., respectively. So also on July 1, both for 1917 and 1918, stocks of manufacturers were about one-third of the total. These uniform percentages are evidences of the fact that while total stocks change, the relative proportion of the total held by manufacturers changes but little for corresponding dates.

Stocks in warehouses, owing to the restrictions upon hoarding and upon the quantities allowed in storage during the war, became a rather small portion of the total. On August 31,

*Not given separately.

†No figures given for retailers' stocks for this date.

1916, warehouses held 214,039 tons, or 29.92 per cent. of the total stocks in the country, but by August 31, 1917, just a year later, these stocks were reduced to 73,364 tons, or 14.12 per cent. of the total, and on January 1 and July 1, 1918, and on January 1, 1919, warehouse stocks were down to around 20,000 tons, or only from 4.22 to 6.53 per cent. of the total.

Stocks of wholesalers and retailers were relatively large on July 1, being about 40 per cent. of the total on July 1, 1917, and about 46 per cent. of the total on July 1, 1918, whereas on January 1, both 1917 and 1918, wholesalers' and retailers' stocks were only 15 per cent. of the total. By July 1 dealers were thus well stocked up in anticipation of the heavy summer and fall demands. The stocks of sugar held by the various sugar-using industries individually were relatively negligible, although in the aggregate these amounts became quite significant.

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for All Classes of Businesses in the United States

(Tons)

August 31, 1917		January 1, 1918		July 1, 1918		January 1, 1919	
Amount	Per Cent.	Amount	Per Cent.	Amount	Per Cent.	Amount	Per Cent.
519,639	100.00	514,100	100.00	364,060	100.00	620,841	100.00
240,384	46.26	351,921	68.45	113,006	31.04	505,563	81.43
*	....	66,150	12.87	69,721	19.15	79,931	12.88
*	....	285,771	55.58	43,285	11.89	425,632	68.55
73,364	14.12	21,697	4.22	23,762	6.53	27,094	4.36
103,699	19.95	42,587	8.28	101,518	27.89	48,390	7.80
45,215	8.70	33,030	6.42	66,702	18.32	†	....
12,839	2.47	16,206	3.15	9,884	2.72	8,568	1.38
12,688	2.44	14,202	2.76	12,866	3.53	7,767	1.25
2,339	.45	*	....	*	....	*	....
4,245	.82	*	....	2,974	.82	1,970	.32
*	....	4,108	.80	4,489	1.23	694	.11
*	....	*	....	7,772	2.13	3,410	.55
*	....	*	....	2,340	.64	1,113	.18
1,179	.23	*	....	*	....	*	....
23,687	4.56	30,349	5.92	18,747	5.15	16,272	2.62

It is of interest to see how much sugar was held by each class of business on these dates in terms of our annual consumption, even though the figures, as explained above, do not actually represent the total supply, particularly in the case of the retail dealers. This is shown in Table 22.

TABLE 22

Stocks of Sugar As Reported by the Food Surveys for All Classes of Business in the United States in Terms of the Country's Daily Consumption Requirements*

Class of Business	Aug. 31, 1916	Jan. 1, 1917	July 1, 1917	Aug. 31, 1917	Jan. 1, 1918	July 1, 1918	Jan. 1, 1919
Total Stocks	65	83	46	47	47	33	56
Manufacturers	30	53	15	22	32	10	46
Cane	†	24	10	†	6	6	7
Beet	†	29	5	†	26	4	39
Warehouses	19	11	7	7	2	2	2
Wholesale Dealers	8	7	13	9	4	9	4
Retail Dealers	4	6	5	4	3	6	††
Sugar-Using Industries—							
Confectioners	1	1	1	1	1	1	.8
Bakers	1	1	1	1	1	1	.7
Ice Cream Freezers.....	.1	†	†	.2	†	†	†
Brewers .....	.2	†	.3	.4	†	.2	.1
Milk Condenseries	†	.1	.2	†	.4	.4	.06
Canners	†	†	.7	†	†	.7	.3
Preserve Manufacturers..	†	†	.2	†	†	.2	.1
Hotels and Restaurants....	.07	†	†	.1	†	†	†
Miscellaneous	1	3	1	2	3	2	1

Manufacturers' stocks were only equal to a ten days' supply on July 1, 1918, but on January 1, 1917, they were equal to 53 days' supply and on January 1, 1919, they were equal to 46 days' supply. Stocks in warehouses represented 19 days' supply on August 31, 1916, but by January 1, 1918, they had been reduced to only two days' supply, and this was the situation also on July 1, 1918, and on January 1, 1919. The maximum stocks of wholesalers were reported on July 1, 1917, when they were equivalent to only thirteen days' supplies and at times they were only equal to four days' requirements. The largest supplies reported by retailers amounted to only six days' requirements for the country. The total stocks of all sugar-using industries and the miscellaneous group combined were never much over five days' requirements. The total sugar stocks reported in these Food Surveys, for all classes of businesses combined, ranged from a minimum of 33 days' supply on July 1, 1918, to a maximum of 83 days' supply on January 1, 1917.

Making proper allowance for the various dealers who did not report their stocks, it may be stated that the total stocks of sugar in the United States, in all hands at any one date, ranged from a minimum of about a month and a half's supplies to a maximum of about three months' supplies. The next step will be to determine what stocks were on hand on various dates in our main sources of supply, Cuba, Hawaii, and Porto Rico.

General Summary of Stocks in the United States§ and Cuba

Table 23 shows the stocks on hand on various dates|| in Cuba and the United States, including Hawaii and Porto Rico. The figures of stocks for the United States include stocks of all business groups as given by the Food Surveys of the Department of Agriculture; wholesalers, retailers, etc. It is clear that on January 1, all but an insignificant portion of the sugar stocks were in the United States, while by July 1 the Cuban stocks had mounted to over half of the total.

*Assuming 10,000 long tons of refined sugar to be the normal daily consumption.

†Not given separately.

††No figures given for retailers' stocks for this date.

§Including Porto Rico and Hawaii.

||Data for other dates are not available for all these regions. The table below (Table 25) shows the stocks on hand on the first of the month, for the year 1918, but the figures for the United States there include only manufacturers' stocks.

TABLE 23

Combined Stocks for Various Dates in the United States, Cuba, Hawaii, and Porto Rico
(Short Tons—Refined Basis)

Date	Stocks in Cuba	Stocks in Hawaii	Stocks in Porto Rico	Stocks in United States (Food Surveys)	Total, All Stocks
Aug. 31, 1916.....	412,192	43,800	23,201	715,330	1,194,523
Jan. 1, 1917.....	33,477	7,111	7,568	908,637	956,793
July 1, 1917.....	720,506	62,051	59,331	507,949	1,349,837
Aug. 31, 1917.....	303,673	78,855	22,185	519,639	924,352
Jan. 1, 1918.....	68,906	5,534	4,987	514,100	593,527
July 1, 1918.....	942,140	110,644	98,852	364,060	1,515,696
Jan. 1, 1919.....	95,421	negligible	negligible	620,841	716,262

The largest stocks shown in Table 23 were on July 1, 1918, when the total on hand in Cuba, Hawaii, Porto Rico and the United States equalled about four and one-half months' supply for the United States, of which somewhat over a month's supply was in the United States and about two and three-quarters months' supply in Cuba. On January 1, 1918, the total stocks were only equal to about one and three-quarters months' supply, of which Cuba, Hawaii and Porto Rico had only small quantities.

Table 24 shows, by percentages, the relative importance of stocks in each locality. On January 1, 1917, Cuban stocks were 3.5 per cent. of the total, but on January 1, 1918, they amounted to 11.6 per cent., and on January 1, 1919, to 13.3 per cent. On July 1, 1917, Cuban stocks were 53.4 per cent. of the total, but on July 1, 1918, they were 62.2 per cent. of the total.

TABLE 24

Relative Importance of Sugar Stocks in Cuba, Hawaii, Porto Rico, and United States on Various Dates

Date	Per Cent. of Total Stocks in United States and Chief Sources of Supply				
	Cuba	Hawaii	Porto Rico	United States	Total
Aug. 31, 1916.....	34.5	3.7	1.9	59.9	100.0
Jan. 1, 1917.....	3.5	.7	.8	95.0	100.0
July 1, 1917.....	53.4	4.6	4.4	37.6	100.0
Aug. 1, 1917.....	32.9	8.5	2.4	56.2	100.0
Jan. 1, 1918.....	11.6	.9	.8	86.7	100.0
July 1, 1918.....	62.2	7.3	6.5	24.0	100.0
Jan. 1, 1919.....	13.3	negligible	negligible	86.7	100.0

Table 25 shows the relative importance of producers' and refiners' stocks on the first day of each month during 1918. Similar data were not available for 1919. It will be noted that refiners' stocks of raws in the United States were but a small part of the total stocks throughout the year. The beet sugar stocks, however, were important in the first and last quarter of the year, that is, at the periods when foreign cane sugar stocks were low. The maximum stocks for all sources combined, were 1,663,000 tons on June 1, 1918, while the maximum point for the United States was reached on February 1, 1918, when stocks of refiners, beet-sugar producers and Louisiana refineries totalled 326,000 tons.

TABLE 25

Relative Importance of Producers' and Refiners' Stocks of Sugar on the First of Each Month in 1918

(In Thousands of Short Tons)

Date	Stocks in Cuba (Raws)	Stocks in Hawaii (Raws)	Stocks in Porto Rico (Raws)	Stocks in the Continental United States			Total, All Stocks
				Refiners' Raws	Beet (Refined)	*Louisiana (Various Grades)	
Jan. 1, 1918.....	50	6	5	11	234	57	363
Feb. 1, 1918.....	386	12	13	27	294	5	737
Mar. 1, 1918.....	706	23	28	58	234	3	1,052
Apr. 1, 1918.....	966	37	30	67	179	1.5	1,281
May 1, 1918.....	1,207	86	63	118	131	..	1,605
June 1, 1918.....	1,219	95	93	163	93	..	1,663
July 1, 1918.....	1,013	119	106	175	48	..	1,461
Aug. 1, 1918.....	767	124	81	151	44	..	1,167
Sept. 1, 1918.....	623	76	59	88	47	..	893
Oct. 1, 1918.....	422	47	39	51	76	..	635
Nov. 1, 1918.....	252	19	10	93	152	5	531
Dec. 1, 1918.....	157	20	8	53	270	35	543

For all sources combined there was a continuous increase in stocks from January 1 to June 1, and just as constant decrease thereafter to the end of the year. The "peak" was reached on June 1, when stocks were equal to almost five months' supply for the United States, while the lowest point was on January 1, when the amount on hand was only slightly in excess of a month's supply for the United States.

Except for the first and last few months of the year, by far the largest proportion of these stocks were in Cuba. A complete statistical record of the receipts of sugar from Cuba and from other overseas sources of supply is therefore presented in the following chapter.

*Estimated.

CHAPTER II

REFINERS' RECEIPTS OF RAW SUGARS

Over three-fourths of the total sugar supply of the United States comes to the refineries in the form of raw cane sugars before passing into consumption. Previous to the War, the statistical information relating to these refiners' receipts of raw sugars came from two sources. First, there was the "Monthly Summary of Foreign Commerce,"* which reported the monthly imports of foreign raw cane sugar into the United States, segregating usually the chief sources of supply.† Although imports of sugar from Porto Rico and Hawaii were not given, the figures could be approximated from the tables showing exports of all commodities from these non-contiguous territories to the mainland. There was obvious disadvantage and inaccuracy, of course, in combining the figures of imports into the United States from foreign sources with figures of exports from the non-contiguous territories into the United States, particularly when monthly periods were being considered. A further disadvantage of these Department of Commerce figures was that they were not available until about a month had elapsed, and they could not, therefore, be utilized as a basis for governmental control of the sugar industry. The second source of information was the sugar trade journals, especially Willett & Gray's Weekly Statistical Sugar Trade Journal, which gave current weekly figures concerning refiners' operations, but only for certain ports and not for concurrent dates.

During the years 1918 and 1919 the United States Food Administration obtained complete and verified weekly figures from all refineries of all receipts of sugar by "ports and kinds," first through the Statistical Department of the International Sugar Committee, and later through the Statistical Department of the United States Sugar Equalization Board. The figures thus obtained are presented in this chapter in convenient form for reference and analysis. It is, of course, the first time such a record has ever been obtained from the sugar refining industry.

Weekly Figures

Tables 26 and 27 show refiners' weekly receipts at the port of Boston for 1918 and 1919. At this port receipts of raw sugar from sources outside of Cuba were relatively negligible in 1918, but it is interesting to note that receipts from Porto Rico and St. Croix were in much greater volume in 1919 than in 1918. The maximum receipts reported in 1918 were for the week of May 18, when 11,054 tons were received, all from Cuba, while in 1919, 17,753 tons were received in the week of May 24, of which 10,642 tons were from Cuba and 7,111 tons from Porto Rico. Since the normal requirements of the New England section of the country are about 837 tons per day, the maximum receipts at Boston refineries equaled about twenty-one days' supply for this section. But in terms of the entire nation's needs the maximum weekly receipts at Boston were only about one and a half days' needs.

Tables 28 and 29 show refiners' weekly receipts at the port of New York for 1918 and 1919. It will be noted that the heaviest receipts were from Cuba and Porto Rico. Receipts of raws from the Continental United States, that is, from Louisiana and Texas, were confined to the last few weeks of 1918 and the first weeks of 1919, and were very small in amount, while receipts from Hawaii, the Philippines and the various foreign sources were sporadic. The maximum receipts in 1918, 61,470 tons, were for the week ending May 18, while in 1919 the maximum was 61,085 tons in the week ending March 1. Expressed in terms of the normal sugar con-

*Issued by the Department of Commerce.

†These figures of imports are not identical with the figures of refiners' receipts, since imports by others than refiners are included (see page 55 below for discussion of the differences involved).

TABLE 26
Refiners' Weekly Receipts by Sources—Boston, 1918
 Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Porto Rico and St. Croix	Philippines	Continental United States	Total
Jan. 5.....	.....	.....	.....	.....	4,521	4,521
Jan. 12.....	5,035	.....	.....	.....	.....	5,035
Jan. 19.....	2,870	.....	.....	.....	.....	2,870
Jan. 26.....	3,148	.....	.....	.....	.....	3,148
Feb. 2.....	114	.....	.....	124	.....	238
Feb. 9.....	2,085	.....	.....	.....	.....	2,085
Feb. 16.....	6,004	.....	.....	.....	.....	6,004
Feb. 23.....	6,487	.....	.....	38	.....	6,525
Mar. 2.....	2,370	.....	1,670	.....	.....	4,040
Mar. 9.....	1,117	.....	4,100	48	.....	5,265
Mar. 16.....	6,922	.....	.....	.....	.....	6,922
Mar. 23.....	2,219	.....	.....	41	.....	2,260
Mar. 30.....	5,448	.....	.....	.....	.....	5,448
Apr. 6.....	5,076	.....	.....	.....	.....	5,076
Apr. 13.....	1,177	105	.....	.....	.....	1,282
Apr. 20.....	7,978	.....	2,195	.....	.....	10,173
Apr. 27.....	6,666	.....	.....	.....	.....	6,666
May 4.....	1,209	89	.....	.....	.....	1,298
May 11.....	5,133	.....	.....	.....	.....	5,133
May 18.....	11,054	.....	.....	.....	.....	11,054
May 25.....	5,607	.....	.....	.....	.....	5,607
June 1.....	3,452	.....	.....	.....	.....	3,452
June 8.....	1,977	.....	.....	.....	.....	1,977
June 15.....	2,919	.....	159	.....	.....	3,078
June 22.....	5,090	.....	1,591	.....	.....	6,681
June 29.....	8,979	.....	1,462	.....	.....	10,441
July 6.....	5,168	.....	40	.....	.....	5,208
July 13.....	.....	.....	.....	.....	.....	.....
July 20.....	5,959	.....	.....	.....	.....	5,959
July 27.....	.....	.....	.....	.....	.....	.....
Aug. 3.....	1,975	.....	.....	.....	.....	1,975
Aug. 10.....	4,339	.....	.....	.....	.....	4,339
Aug. 17.....	1,703	.....	.....	.....	.....	1,703
Aug. 24.....	6,088	.....	.....	.....	.....	6,088
Aug. 31.....	.....	.....	.....	.....	.....	.....
Sept. 7.....	1,977	.....	.....	.....	.....	1,977
Sept. 14.....	1,482	.....	.....	.....	.....	1,482
Sept. 21.....	8,894	.....	.....	.....	.....	8,894
Sept. 28.....	13	.....	.....	.....	.....	13
Oct. 5.....	.....	.....	.....	.....	.....	.....
Oct. 12.....	3,821	.....	.....	.....	.....	3,821
Oct. 19.....	2,820	.....	.....	.....	.....	2,820
Oct. 26.....	4,403	.....	.....	.....	.....	4,403
Nov. 2.....	5,421	.....	.....	.....	.....	5,421
Nov. 9.....	2,467	.....	.....	.....	.....	2,467
Nov. 16.....	.....	.....	.....	.....	.....	.....
Nov. 23.....	3,613	.....	.....	.....	.....	3,613
Nov. 30.....	1,952	.....	.....	.....	.....	1,952
Dec. 7.....	.....	.....	.....	.....	.....	.....
Dec. 14.....	1,679	.....	.....	.....	.....	1,679
Dec. 21.....	397	.....	.....	.....	2,518	2,915
Dec. 28.....	2,705	.....	.....	.....	.....	2,705
Dec. 29-31.....	.....	.....	.....	.....	.....	.....
Total.....	177,012	194	11,217	251	7,039	195,713

TABLE 27
Refiners' Weekly Receipts by Sources—Boston, 1919
 Unit—Long Tons

Week Ending	Cuba	Porto Rico and St. Croix	Philippines	Total
Jan. 1-4.....	3,676	....	....	3,676
Jan. 11.....	....	....	....	....
Jan. 18.....	2,000	....	....	2,000
Jan. 25.....	9,381	....	....	9,381
Feb. 1.....	....	....	....	....
Feb. 8.....	7,663	....	....	7,663
Feb. 15.....	3,544	....	....	3,544
Feb. 22.....	4,872	2,570	....	7,442
Mar. 1.....	8,656	3,070	....	11,726
Mar. 8.....	2,429	1,615	....	4,044
Mar. 15.....	3,141	3,000	....	6,141
Mar. 22.....	6,094	....	....	6,094
Mar. 29.....	2,107	....	....	2,107
Apr. 5.....	9,831	3,000	....	12,831
Apr. 12.....	8,474	....	....	8,474
Apr. 19.....	....	4,670	....	4,670
Apr. 26.....	2,949	....	....	2,949
May 3.....	12,334	....	....	12,334
May 10.....	2,540	....	....	2,540
May 17.....	5,721	950	....	6,671
May 24.....	10,642	7,111	....	17,753
May 31.....	....	....	....	....
June 7.....	8,816	24	....	8,840
June 14.....	2,733	3,400	....	6,133
June 21.....	....	....	....	....
June 28.....	2,766	4,266	....	7,032
July 5.....	....	3,580	....	3,580
July 12.....	8,438	928	968	10,334
July 19.....	2,798	331	....	3,129
July 26.....	2,676	3,311	....	5,987
Aug. 2.....	1,872	....	....	1,872
Aug. 9.....	4,680	....	....	4,680
Aug. 16.....	3,191	....	....	3,191
Aug. 23.....	3,344	....	....	3,344
Aug. 30.....	8,768	....	....	8,768
Sept. 6.....	9,208	....	....	9,208
Sept. 13.....	11,568	....	....	11,568
Sept. 20.....	20	1,592	....	1,612
Sept. 27.....	8,576	....	....	8,576
Oct. 4.....	3,041	....	....	3,041
Oct. 11.....	8,910	....	....	8,910
Oct. 18.....	5,454	20	....	5,474
Oct. 25.....	5,131	....	....	5,131
Nov. 1.....	4,647	....	....	4,647
Nov. 8.....	2,719	....	....	2,719
Nov. 15.....	5,199	....	....	5,199
Nov. 22.....	2,549	....	....	2,549
Nov. 29.....	2,873	....	....	2,873
Dec. 6.....	2,118	....	....	2,118
Dec. 13.....	2,960	....	....	2,960
Dec. 20.....	....	....	....	....
Dec. 27.....	125	....	....	125
Dec. 28-31.....	....	....	....	....
Total	231,234	43,438	968	275,640

TABLE 28
Refiners' Weekly Receipts By Sources—New York—1918
 Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Jan. 5.....	5,909	....	....	578	124	....	6,611
Jan. 12.....	7,875	172	....	2,565	1,076	....	11,688
Jan. 19.....	13,766	937	578	1,254	533	....	17,068
Jan. 26.....	17,553	759	....	6,872	....	....	25,184
Feb. 2.....	9,786	48	2,358	6,204	....	....	18,396
Feb. 9.....	20,306	....	4,025	5,234	....	....	29,565
Feb. 16.....	23,771	....	....	8,641	....	....	32,412
Feb. 23.....	20,331	857	....	6,585	143	....	27,916
Mar. 2.....	34,216	92	....	2,611	124	....	37,043
Mar. 9.....	21,321	49	....	6,486	....	....	27,856
Mar. 16.....	24,474	575	....	13,696	51	....	38,796
Mar. 23.....	29,879	52	....	12,196	48	....	42,175
Mar. 30.....	28,168	98	49	3,730	....	....	32,045
Apr. 6.....	28,583	....	114	6,342	22	....	35,061
Apr. 13.....	20,024	....	....	690	39	....	20,753
Apr. 20.....	45,161	143	112	6,588	....	....	52,004
Apr. 27.....	35,094	....	....	9,785	....	....	44,879
May 4.....	36,034	50	24	8,199	....	....	44,307
May 11.....	29,272	....	....	11,500	....	....	40,772
May 18.....	47,369	....	1,224	12,877	....	....	61,470
May 25.....	40,796	1,639	2,639	4,774	....	....	49,848
June 1.....	30,586	81	2,194	8,467	....	....	41,328
June 8.....	41,271	512	1,949	3,907	....	....	47,639
June 15.....	38,814	....	924	8,875	....	....	48,613
June 22.....	39,969	498	497	6,220	....	....	47,184
June 29.....	26,309	570	96	2,793	....	....	29,768
July 6.....	25,057	13	106	12,635	....	....	37,811
July 13.....	26,201	585	34	3,985	....	....	30,805
July 20.....	5,478	....	183	9,738	....	....	15,399
July 27.....	33,486	66	238	5,067	....	....	38,857
Aug. 3.....	13,199	424	....	10,157	....	12	23,792
Aug. 10.....	14,108	911	35	8,881	....	....	23,935
Aug. 17.....	20,559	912	....	2,354	....	....	23,825
Aug. 24.....	22,429	37	....	1,031	....	....	23,497
Aug. 31.....	15,668	50	....	5,133	....	....	20,851
Sept. 7.....	15,303	99	....	8,595	....	....	23,997
Sept. 14.....	18,772	145	....	5,058	....	....	23,975
Sept. 21.....	13,275	57	....	5,092	....	17	18,441
Sept. 28.....	21,761	....	2,248	2,030	....	....	26,039
Oct. 5.....	16,792	....	3,254	7,430	....	....	27,476
Oct. 12.....	5,388	24	6,490	4,185	....	....	16,087
Oct. 19.....	17,012	....	10,224	1,106	....	....	28,342
Oct. 26.....	25,367	....	2,398	10,152	....	....	37,917
Nov. 2.....	8,952	707	5,931	3,539	750	....	19,879
Nov. 9.....	17,871	....	2,988	5,662	560	....	27,081
Nov. 16.....	9,283	....	2,626	141	....	....	12,050
Nov. 23.....	12,904	....	....	190	....	2	13,096
Nov. 30.....	17,810	1,175	....	....	....	....	18,985
Dec. 7.....	3,779	....	....	1,702	44	....	5,525
Dec. 14.....	....	....	....	2,619	68	2,261	4,948
Dec. 21.....	12,787	....	....	329	....	4,108	17,224
Dec. 28.....	8,937	423	....	....	....	3,885	13,245
Dec. 29-31....	4,457	1	....	....	....	3,273	7,731
Total for year	1,123,272	12,761	53,538	284,480	3,582	13,558	1,491,191

TABLE 29

Refiners' Weekly Receipts By Sources—New York—1919

Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Jan. 1-4....	3,692	....	....	1,508	....	....	5,200
Jan. 11.....	5,830	....	....	2,322	....	2,930	11,082
Jan. 18.....	14,185	....	....	6,563	....	5,370	26,118
Jan. 25.....	43,570	1,361	....	....	....	2,261	47,192
Feb. 1.....	20,663	127	618	5,286	....	71	26,765
Feb. 8.....	28,285	2,673	2,305	4,403	372	14	38,052
Feb. 15.....	27,758	600	....	5,025	4,149	....	37,532
Feb. 22.....	34,848	1,056	....	7,770	10,897	62	54,633
Mar. 1.....	56,755	504	....	2,146	1,622	58	61,085
Mar. 8.....	23,460	1,036	....	4,385	2,118	....	30,999
Mar. 15.....	36,800	....	....	2,204	787	....	39,791
Mar. 22.....	17,918	1,123	....	3,895	1,263	127	24,326
Mar. 29.....	25,683	4,000	....	2,514	596	7	32,800
Apr. 5.....	44,080	....	2,846	3,368	....	2	50,296
Apr. 12.....	43,064	251	....	5,245	226	2	48,788
Apr. 19.....	35,831	631	....	6,461	....	2	42,925
Apr. 26.....	30,585	2,211	2,207	4,798	....	2	39,803
May 3.....	36,068	2,352	4,563	2,938	....	6	45,927
May 10.....	52,541	810	230	....	....	....	53,581
May 17.....	47,371	2,568	6,469	3,821	....	4	60,233
May 24.....	30,803	1,315	4,839	1,447	....	....	38,404
May 31.....	37,422	....	974	1,257	....	7	39,660
June 7.....	30,101	1,180	2,764	8,354	....	....	42,399
June 14.....	29,765	487	6,959	300	....	2	37,513
June 21.....	44,745	....	466	6,212	....	2	51,425
June 28.....	34,398	....	868	4,026	....	1	39,293
July 5.....	16,334	....	10,781	3,871	2,458	....	33,444
July 12.....	41,624	....	2	5,668	....	....	47,294
July 19.....	41,606	....	5,480	3,762	....	....	50,848
July 26.....	31,801	....	882	9,760	....	6	42,449
Aug. 2.....	38,575	....	3,221	4,171	....	13	45,980
Aug. 9.....	16,334	....	2	3,532	....	....	19,868
Aug. 16.....	14,932	....	2,436	5,036	....	2	22,406
Aug. 23.....	27,535	....	12,160	3,257	....	....	42,952
Aug. 30.....	46,890	....	....	5,167	....	....	52,057
Sept. 6.....	42,371	....	....	2,572	....	2	44,945
Sept. 13.....	30,916	....	....	6,865	....	....	37,781
Sept. 20.....	29,375	....	....	12,708	....	4	42,087
Sept. 27.....	30,649	....	5,592	1,378	....	2	37,621
Oct. 4.....	23,068	....	999	2,418	....	9	26,494
Oct. 11.....	31,588	....	....	1,463	....	....	33,051
Oct. 18.....	24,418	....	....	3,113	....	3	27,534
Oct. 25.....	24,934	....	....	....	....	....	24,934
Nov. 1.....	39,664	....	....	590	....	....	40,254
Nov. 8.....	24,432	....	....	702	....	2	25,136
Nov. 15.....	26,665	....	....	....	....	2	26,667
Nov. 22.....	23,515	1,266	....	....	625	....	25,406
Nov. 29.....	28,027	....	267	647	149	10	29,100
Dec. 6.....	14,718	642	....	2	....	3	15,365
Dec. 13.....	....	149	....	....	....	....	149
Dec. 20.....	2,144	983	....	250	....	....	3,377
Dec. 27.....	12,675	312	3,462	....	....	....	16,449
Dec. 28-31...	8,275	....	3,400	....	....	....	11,675
Total.....	1,529,286	27,637	84,792	173,180	25,262	10,988	1,851,145

TABLE 30
Refiners' Weekly Receipts By Sources—Philadelphia, 1918
 Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Jan. 5.....	.....	....	203	....	349	173	725
Jan. 12.....	6,169	....	154	....	376	34	6,733
Jan. 19.....	12,522	....	353	....	570	....	13,445
Jan. 26.....	2,819	....	125	....	142	....	3,086
Feb. 2.....	5,154	....	303	....	247	82	5,786
Feb. 9.....	3,270	....	231	....	120	145	3,766
Feb. 16.....	8,162	....	317	....	142	....	8,621
Feb. 23.....	10,336	....	216	....	194	....	10,746
Mar. 2.....	13,650	....	....	....	126	....	13,776
Mar. 9.....	9,086	....	81	....	178	....	9,345
Mar. 16.....	7,768	....	114	....	....	....	7,882
Mar. 23.....	10,364	....	89	....	70	....	10,523
Mar. 30.....	10,980	....	133	....	78	....	11,191
Apr. 6.....	24,380	....	145	....	....	....	24,525
Apr. 13.....	....	....	....	....	....	....	....
Apr. 20.....	13,656	....	71	....	....	....	13,727
Apr. 27.....	11,809	....	508	....	3	....	12,320
May 4.....	8,289	....	2,595	....	....	....	10,884
May 11.....	23,853	....	605	1,364	....	....	25,822
May 18.....	6,636	....	1,163	3,456	....	....	11,255
May 25.....	21,832	....	2,123	1,878	....	....	25,833
June 1.....	3,869	....	2,907	2	....	....	6,778
June 8.....	10,206	....	1,837	....	....	....	12,043
June 15.....	10,455	....	3,425	....	....	....	13,880
June 22.....	14,586	....	....	....	....	....	14,586
June 29.....	16,690	....	367	....	....	....	17,057
July 6.....	11,946	....	256	....	....	....	12,202
July 13.....	12,514	....	1,630	....	....	....	14,144
July 20.....	13,807	....	465	....	....	....	14,272
July 27.....	6,528	....	245	....	....	....	6,773
Aug. 3.....	3,891	....	62	....	....	....	3,953
Aug. 10.....	8,409	....	....	....	....	....	8,409
Aug. 17.....	4,023	....	2,628	....	....	....	6,651
Aug. 24.....	2,214	....	4,064	....	....	....	6,278
Aug. 31.....	148	....	....	....	....	....	148
Sept. 7.....	11,213	....	....	....	....	....	11,213
Sept. 14.....	6,659	....	....	....	....	....	6,659
Sept. 21.....	2,020	....	....	....	....	....	2,020
Sept. 28.....	159	....	....	371	....	....	530
Oct. 5.....	8,478	....	5,052	264	....	....	13,794
Oct. 12.....	2,378	....	6,805	....	....	....	9,183
Oct. 19.....	5,946	....	5,193	56	....	....	11,195
Oct. 26.....	4,730	....	3,422	....	....	....	8,152
Nov. 2.....	14,027	....	3,244	....	....	....	17,271
Nov. 9.....	6,678	....	8	....	....	....	6,686
Nov. 16.....	1,588	....	....	....	....	....	1,588
Nov. 23.....	6,489	....	....	....	....	....	6,489
Nov. 30.....	2,860	....	....	....	....	....	2,860
Dec. 7.....	5,161	....	....	....	....	....	5,161
Dec. 14.....	1,923	....	....	....	....	....	1,923
Dec. 21.....	6,073	....	....	....	....	....	6,073
Dec. 28.....	....	....	....	....	....	....	....
Dec. 29-31...	....	....	....	....	....	....	....
Total	416,403	....	51,139	7,391	2,595	434	477,962

TABLE 31
Refiners' Weekly Receipts By Sources—Philadelphia, 1919
 Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Total
Jan. 1-4.....	2,585	....	....	....	2,585
Jan. 11.....	1,512	....	....	....	1,512
Jan. 18.....	9,475	....	901	....	10,376
Jan. 25.....	10,983	....	3,837	....	14,820
Feb. 1.....	14,909	....	....	....	14,909
Feb. 8.....	9,523	....	....	....	9,523
Feb. 15.....	15,720	....	....	....	15,720
Feb. 22.....	16,254	....	....	....	16,254
Mar. 1.....	18,404	....	....	....	18,404
Mar. 8.....	16,624	....	....	....	16,624
Mar. 15.....	23,384	....	....	....	23,384
Mar. 22.....	1,645	....	....	....	1,645
Mar. 29.....	15,299	....	....	....	15,299
Apr. 5.....	30,570	....	....	....	30,570
Apr. 12.....	33,145	....	....	....	33,145
Apr. 19.....	8,825	....	1,262	....	10,087
Apr. 26.....	7,128	....	1,609	....	8,737
May 3.....	26,322	....	2,888	....	29,210
May 10.....	25,524	....	....	....	25,524
May 17.....	14,030	....	....	....	14,030
May 24.....	26,903	....	2,828	....	29,731
May 31.....	4,196	....	....	....	4,196
June 7.....	7,973	....	7	....	7,980
June 14.....	20,006	....	....	....	20,006
June 21.....	12,024	....	....	....	12,024
June 28.....	13,527	....	....	3,596	17,123
July 5.....	11,815	....	....	1,232	13,047
July 12.....	10,001	....	5,926	....	15,927
July 19.....	12,583	....	6,321	1,629	20,533
July 26.....	7,275	....	898	....	8,173
Aug. 2.....	13,811	....	....	....	13,811
Aug. 9.....	7,025	....	3,384	3,042	13,451
Aug. 16.....	1,335	....	3,388	....	4,723
Aug. 23.....	5,497	....	13,804	4,474	23,775
Aug. 30.....	18,204	....	4,600	3,710	26,514
Sept. 6.....	15,675	....	3,720	....	19,395
Sept. 13.....	5,831	....	4,705	....	10,536
Sept. 20.....	14,563	....	....	....	14,563
Sept. 27.....	12,528	....	71	....	12,599
Oct. 4.....	14,694	....	....	....	14,694
Oct. 11.....	6,991	....	....	....	6,991
Oct. 18.....	12,639	....	....	....	12,639
Oct. 25.....	13,989	....	....	....	13,989
Nov. 1.....	17,689	....	....	....	17,689
Nov. 8.....	2,174	....	....	....	2,174
Nov. 15.....	162	....	....	....	162
Nov. 22.....	6,912	....	....	....	6,912
Nov. 29.....	12,241	....	41	....	12,282
Dec. 6.....	9,835	....	....	....	9,835
Dec. 13.....	....	....	....	....	....
Dec. 20.....	....	....	....	....	....
Dec. 27.....	....	....	....	....	....
Dec. 28-31.....	....	....	....	....	....
Total.....	619,959	....	60,190	17,683	697,832

TABLE 32
Refiners' Weekly Receipts by Sources—New Orleans, 1918
 Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Porto Rico and St. Croix	Continental United States	Total
Jan. 5.....	1,508	....	....	2,494	4,002
Jan. 12.....	2,670	....	2,786	1,676	7,132
Jan. 19.....	4,003	....	....	257	4,260
Jan. 26.....	13,478	....	....	159	13,637
Feb. 2.....	7,955	....	....	41	7,996
Feb. 9.....	16,550	....	765	2	17,317
Feb. 16.....	11,733	....	....	....	11,733
Feb. 23.....	12,496	....	2,043	....	14,539
Mar. 2.....	6,206	....	....	....	6,206
Mar. 9.....	12,806	265	895	....	13,966
Mar. 16.....	9,006	479	2,848	....	12,333
Mar. 23.....	10,908	398	1,469	....	12,775
Mar. 30.....	9,699	227	....	....	9,926
Apr. 6.....	6,395	268	6,036	....	12,699
Apr. 13.....	9,025	....	....	....	9,025
Apr. 20.....	17,592	....	3,381	....	20,973
Apr. 27.....	13,795	268	....	....	14,063
May 4.....	11,778	....	2,791	....	14,569
May 11.....	20,699	269	374	....	21,342
May 18.....	13,121	....	3,477	....	16,598
May 25.....	14,860	471	....	....	15,331
June 1.....	8,847	415	2,641	....	11,903
June 8.....	9,933	396	1,012	....	11,341
June 15.....	6,307	1,302	2,814	....	10,423
June 22.....	15,807	202	....	....	16,009
June 29.....	10,150	....	....	....	10,150
July 6.....	4,563	....	2,792	....	7,355
July 13.....	7,669	....	2,857	....	10,526
July 20.....	6,948	196	....	....	7,144
July 27.....	5,646	536	....	....	6,182
Aug. 3.....	1,581	265	4,048	1	5,895
Aug. 10.....	4,409	....	2,568	....	6,977
Aug. 17.....	9,066	....	....	....	9,066
Aug. 24.....	522	....	....	....	522
Aug. 31.....	2,654	....	....	....	2,654
Sept. 7.....	367	264	479	....	1,110
Sept. 14.....	....	....	3,584	....	3,584
Sept. 21.....	103	....	1,187	....	1,290
Sept. 28.....	5	2	691	253	951
Oct. 5.....	....	....	2,495	27	2,522
Oct. 12.....	4,243	....	....	....	4,243
Oct. 19.....	....	....	739	2,474	3,213
Oct. 26.....	1,377	....	600	....	1,977
Nov. 2.....	....	....	....	....	....
Nov. 9.....	....	....	....	....	....
Nov. 16.....	....	....	....	....	....
Nov. 23.....	2,655	....	....	....	2,655
Nov. 30.....	4,090	....	....	....	4,090
Dec. 7.....	12,261	....	....	....	12,261
Dec. 14.....	....	....	....	....	....
Dec. 21.....	398	....	....	....	398
Dec. 28.....	....	....	....	....	....
Dec. 29-31.....	....	....	....	....	....
Total.....	345,884	6,223	55,372	7,384	414,863

TABLE 33
Refiners' Weekly Receipts by Sources—New Orleans, 1919
 Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Porto Rico and St. Croix	Continental United States	Total
Jan. 1-4.....	2,581	....	....	....	2,581
Jan. 11.....	3,144	....	....	....	3,144
Jan. 18.....	....	....	....	....	....
Jan. 25.....	7,242	....	....	4,354	11,596
Feb. 1.....	9,984	194	....	3,654	13,832
Feb. 8.....	3,255	....	....	3,212	6,467
Feb. 15.....	14,319	....	1,527	2,447	18,293
Feb. 22.....	8,380	....	3,743	3,672	15,795
Mar. 1.....	7,078	....	2,800	2,482	12,360
Mar. 8.....	12,576	....	2,046	1,821	16,443
Mar. 15.....	7,443	387	2,276	406	10,512
Mar. 22.....	7,335	....	4,461	135	11,931
Mar. 29.....	9,069	133	....	50	9,252
Apr. 5.....	13,129	800	2,850	....	16,779
Apr. 12.....	15,617	769	3,878	243	20,507
Apr. 19.....	10,708	866	1,319	428	13,321
Apr. 26.....	10,242	560	1,890	518	13,210
May 3.....	8,623	1,200	....	204	10,027
May 10.....	21,691	202	2,715	35	24,643
May 17.....	11,380	....	3,000	23	14,403
May 24.....	14,071	....	1,911	21	16,003
May 31.....	3,790	....	835	....	4,625
June 7.....	10,032	....	488	215	10,735
June 14.....	8,710	....	2,939	713	12,362
June 21.....	15,426	399	1,856	387	18,068
June 28.....	5,267	....	2,116	43	7,426
July 5.....	9,776	666	79	....	10,521
July 12.....	3,296	....	2,115	....	5,411
July 19.....	5,571	....	826	....	6,397
July 26.....	8,105	145	5,385	46	13,681
Aug. 2.....	12,854	1,521	5,838	294	20,507
Aug. 9.....	2,040	296	....	259	2,595
Aug. 16.....	8,103	....	....	....	8,103
Aug. 23.....	9,186	....	....	7	9,193
Aug. 30.....	13,101	....	2,984	....	16,085
Sept. 6.....	7,668	....	1,156	....	8,824
Sept. 13.....	8,372	....	2,438	....	10,810
Sept. 20.....	8,835	....	2,247	....	11,082
Sept. 27.....	6,853	....	1,436	....	8,289
Oct. 4.....	8,286	....	3,419	....	11,705
Oct. 11.....	7,467	....	....	....	7,467
Oct. 18.....	5,026	....	....	....	5,026
Oct. 25.....	280	....	1,915	....	2,195
Nov. 1.....	8,765	....	....	....	8,765
Nov. 8.....	5,975	....	....	....	5,975
Nov. 15.....	7,691	....	2,477	....	10,168
Nov. 22.....	6,205	....	681	....	6,886
Nov. 29.....	1,996	....	....	....	1,996
Dec. 6.....	2,515	....	3	....	2,518
Dec. 13.....	2,237	....	....	....	2,237
Dec. 20.....	84	....	....	....	84
Dec. 27.....	....	....	....	....	....
Dec. 28-31.....	....	....	25	....	25
Total	401,379	8,138	75,674	25,669	510,860

TABLE 34

Refiners' Weekly Receipts (All Cuban), At the Ports of Galveston and Savannah
Unit—Long Tons

1918			1919		
Week Ending	Galveston	Savannah	Week Ending	Galveston	Savannah
Jan. 5.....	....	....	Jan. 1-4.....	....	....
Jan. 12.....	....	....	Jan. 11.....	....	....
Jan. 19.....	2,175	2,433	Jan. 18.....	....	1,155
Jan. 26.....	19	567	Jan. 25.....	2,500	1,240
Feb. 2.....	....	1,567	Feb. 1.....	....	1,527
Feb. 9.....	3,201	2,516	Feb. 8.....	3,724	1,532
Feb. 16.....	....	4,516	Feb. 15.....	....	2,476
Feb. 23.....	16	2,557	Feb. 22.....	¶4,540	4,079
Mar. 2.....	....	2,352	Mar. 1.....	....	2,517
Mar. 9.....	2,705	3,544	Mar. 8.....	2,228	1,150
Mar. 16.....	2,982	4,880	Mar. 15.....	1,777	3,242
Mar. 23.....	1,821	2,996	Mar. 22.....	11	3,452
Mar. 30.....	....	3,444	Mar. 29.....	....	1,948
Apr. 6.....	....	1,965	Apr. 5.....	3,437	1,138
Apr. 13.....	....	752	Apr. 12.....	....	1,883
Apr. 20.....	2,675	313	Apr. 19.....	53	2,099
Apr. 27.....	....	139	Apr. 26.....	....	1,845
May 4.....	43	247	May 3.....	....	5,173
May 11.....	1,696	221	May 10.....	3,013	2,777
May 18.....	2,857	134	May 17.....	2,455	724
May 25.....	6,912	1,612	May 24.....	154	2,379
June 1.....	....	†659	May 31.....	3,571	3,719
June 8.....	41	823	June 7.....	52	4,439
June 15.....	68	1,369	June 14.....	3,214	3,210
June 22.....	....	305	June 21.....	....	438
June 29.....	....	4,217	June 28.....	3,697	4,832
July 6.....	....	4,586	July 5.....	21	121
July 13.....	....	613	July 12.....	75	**4,701
July 20.....	2,857	1,439	July 19.....	2,768	732
July 27.....	....	724	July 26.....	....	††1,113
Aug. 3.....	1,599	‡1,204	Aug. 2.....	8,705	3,014
Aug. 10.....	1,317	2,884	Aug. 9.....	....	3,268
Aug. 17.....	....	976	Aug. 16.....	418	2,214
Aug. 24.....	2,893	§1,297	Aug. 23.....	77	2,101
Aug. 31.....	106	1,638	Aug. 30.....	....	1,767
Sept. 7.....	....	....	Sept. 6.....	....	1,214
Sept. 14.....	....	1,812	Sept. 13.....	....	3,202
Sept. 21.....	....	2,998	Sept. 20.....	6,116	562
Sept. 28.....	1,390	814	Sept. 27.....	....	5,116
Oct. 5.....	3	652	Oct. 4.....	172	879
Oct. 12.....	2,411	1,706	Oct. 11.....	88	753
Oct. 19.....	....	509	Oct. 18.....	....	....
Oct. 26.....	2,453	592	Oct. 25.....	....	2,465
Nov. 2.....	92	1,105	Nov. 1.....	....	....
Nov. 9.....	....	419	Nov. 8.....	....	....
Nov. 16.....	....	....	Nov. 15.....	....	....
Nov. 23.....	....	1,912	Nov. 22.....	2,366	....
Nov. 30.....	....	....	Nov. 29.....	....	....
Dec. 7.....	....	....	Dec. 6.....	....	....
Dec. 14.....	....	1,485	Dec. 13.....	3,802	....
Dec. 21.....	....	1,571	Dec. 20.....	....	....
Dec. 28.....	....	1,429	Dec. 27.....	87	....
Dec. 29-31.....	....	466	Dec. 28-31.....	....	....
Total for Year..	42,332	76,959		59,121	92,196

†Includes 7 tons from Continental United States.

‡Includes 1,009 tons from Porto Rico.

§Includes 21 tons from Continental United States.

¶Includes 1,122 tons from Continental United States.

**Includes 2,381 tons from Porto Rico.

††Includes 316 tons from Porto Rico.

TABLE 35
Refiners' Weekly Receipts by Sources—San Francisco, 1918
 Unit—Long Tons

Week Ending	Hawaii	Philippines	Total
Jan. 5.....	2,384	....	2,384
Jan. 12.....	....	....	....
Jan. 19.....	6,232	....	6,232
Jan. 26.....	2,096	1,217	3,313
Feb. 2.....	6,005	....	6,005
Feb. 9.....	7,307	....	7,307
Feb. 16.....	10,008	....	10,008
Feb. 23.....	8,769	....	8,769
Mar. 2.....	7,775	....	7,775
Mar. 9.....	6,748	2,095	8,843
Mar. 16.....	6,910	3,415	10,325
Mar. 23.....	5,050	3,477	8,527
Mar. 30.....	11,556	1,451	13,007
Apr. 6.....	6,009	....	6,009
Apr. 13.....	10,836	9,913	20,749
Apr. 20.....	5,056	4,642	9,698
Apr. 27.....	9,603	5,086	14,689
May 4.....	3,194	318	3,512
May 11.....	5,841	....	5,841
May 18.....	7,312	1,129	8,441
May 25.....	6,990	....	6,990
June 1.....	4,090	....	4,090
June 8.....	16,920	....	16,920
June 15.....	7,013	3,903	10,916
June 22.....	9,521	....	9,521
June 29.....	....	945	945
July 6.....	5,068	....	5,068
July 13.....	18,498	....	18,498
July 20.....	11,117	....	11,117
July 27.....	7,677	1,244	8,921
Aug. 3.....	6,037	....	6,037
Aug. 10.....	10,759	....	10,759
Aug. 17.....	8,172	....	8,172
Aug. 24.....	13,783	443	14,226
Aug. 31.....	7,251	....	7,251
Sept. 7.....	2,257	....	2,257
Sept. 14.....	7,220	....	7,220
Sept. 21.....	10,274	....	10,274
Sept. 28.....	10,029	....	10,029
Oct. 5.....	5,144	4,837	9,981
Oct. 12.....	5,692	2,631	8,323
Oct. 19.....	6,485	3,749	10,234
Oct. 26.....	3,806	....	3,806
Nov. 2.....	10,736	....	10,736
Nov. 9.....	7,581	....	7,581
Nov. 16.....	2,238	....	2,238
Nov. 23.....	4	2,584	2,588
Nov. 30.....	1,359	196	1,555
Dec. 7.....	163	203	366
Dec. 14.....	....	190	190
Dec. 21.....	3	1,797	1,800
Dec. 28.....	2,538	3,966	6,504
Dec. 29-31.....	2,203	1,705	3,908
Total for Year	339,319	61,136	400,455

TABLE 36
Refiners' Weekly Receipts by Sources—San Francisco, 1919
 Unit—Long Tons

Week Ending	Hawaii	Philippines	Total
Jan. 1-4.....	212	1,636	1,848
Jan. 11.....	3,818	2,902	6,720
Jan. 18.....	7,061	410	7,471
Jan. 25.....	10,602	2,678	13,280
Feb. 1.....	9,070	3,812	12,882
Feb. 8.....	12,591	422	13,013
Feb. 15.....	7,987	21	8,008
Feb. 22.....	11,292	....	11,292
Mar. 1.....	11,842	442	12,284
Mar. 8.....	11,679	735	12,414
Mar. 15.....	13,258	....	13,258
Mar. 22.....	14,040	....	14,040
Mar. 29.....	9,054	396	9,450
Apr. 5.....	11,094	4,032	15,126
Apr. 12.....	7,788	493	8,281
Apr. 19.....	9,807	497	10,304
Apr. 26.....	6,954	7,656	14,610
May 3.....	9,835	1,026	10,861
May 10.....	9,326	1,536	10,862
May 17.....	8,181	1,735	9,916
May 24.....	11,629	3,176	14,805
May 31.....	6,507	1,180	7,687
June 7.....	8,495	1,165	9,660
June 14.....	7,687	795	8,482
June 21.....	10,466	1,055	11,521
June 28.....	9,398	1,318	10,716
July 5.....	9,368	838	10,206
July 12.....	8,892	229	9,121
July 19.....	7,920	1,135	9,055
July 26.....	5,236	369	5,605
Aug. 2.....	13,842	349	14,191
Aug. 9.....	5,533	....	5,533
Aug. 16.....	7,917	1,623	9,540
Aug. 23.....	2,665	298	2,963
Aug. 30.....	7,713	....	7,713
Sept. 6.....	8,001	....	8,001
Sept. 13.....	9,055	....	9,055
Sept. 20.....	3,004	....	3,004
Sept. 27.....	5,635	....	5,635
Oct. 4.....	8,148	....	8,148
Oct. 11.....	7,471	....	7,471
Oct. 18.....	3,296	....	3,296
Oct. 25.....	8,814	....	8,814
Nov. 1.....	861	....	861
Nov. 8.....	....	....	....
Nov. 15.....	....	....	....
Nov. 22.....	2,853	....	2,853
Nov. 29.....	....	....	....
Dec. 6.....	2,296	....	2,296
Dec. 13.....	211	....	211
Dec. 20.....	....	....	....
Dec. 27.....	....	....	....
Dec. 28-31.....	....	191	191
Total for Year..	368,404	44,150	412,554

sumption of the Atlantic States, the weekly receipts at New York ranged from a minimum of about one day's supply for the week of December 20, 1919,* to a maximum of about sixteen days' supply in the week of March 1, 1919. In terms of the entire country's consumption the maximum was equal to about six days' supply.

Tables 30 and 31 give refiners' weekly receipts at the port of Philadelphia for 1918 and 1919. The heaviest receipts at this port were from Cuba, as at New York, but the largest weekly receipts from this source were only 24,380 tons in the week of April 6, 1918, and 33,145 tons in the week of April 12, 1919, as compared with the maximum weekly receipts from Cuba of over 56,000 tons at New York. Receipts from other sources of supply were relatively small, the maximum amounts from Hawaii being 6,805 tons in the week of October 12, 1918, and 13,804 in the week ending August 23, 1919. The largest weekly receipts at this port represented but three days' supply for the country.

Tables 32 and 33 show refiners' weekly receipts at the port of New Orleans in 1918 and 1919. Cuban receipts were the heaviest, the maximum for each year being 20,699 tons for the week of May 11 in 1918 and 21,691 tons for the week of May 10 in 1919. There were, of course, no receipts of Hawaiian or Philippine sugars, which came entirely to the Eastern and the Western refineries. Receipts from Porto Rico for both years formed a significant portion of the total. The large receipts of raw sugar in 1919 from the Continental United States (Louisiana and Texas) reflect the larger domestic cane crop of that year and the activities of the Louisiana Sugar Committee† in the disposition of the crop. The maximum receipts of raw sugars in 1918, 21,342 tons, were for the week ending May 11, while for the week ending May 10, 1919, 24,643 tons were received. For the requirements of the Southern territory of the country these maxima represent about ten days' and twelve days' supplies respectively, but only about two days' supply for the United States.

Table 34 shows refiners' receipts at the ports of Galveston and Savannah, all Cuban sugars, with the exception of three cargoes of Porto Ricans at Savannah and relatively negligible quantities from the domestic cane crop. The maximum receipts for Galveston were 6,912 tons, for the week ending May 25, 1918, and 8,705 tons for the week ending August 2, 1919—not quite one day's normal supply for the United States, but about four days' supply for the southern territory. The maximum receipts for Savannah were 4,880 tons for the week ending March 16, 1918, and 5,173 tons for the week ending May 3, 1919, about one-half a day's supply for the United States, or about two and one-half days' supply for the southern territory.

Tables 35 and 36 show refiners' receipts weekly at the port of San Francisco. These receipts are from Hawaii and the Philippines only. The maximum receipts were 20,749 tons for the week of April 13 in 1918, and 15,126 tons for the week of April 5 in 1919, or about twenty-five and eighteen days' supply respectively for the Western portion of the country, or about two days' and one and a half days' supply for the whole United States.

The figures in this chapter thus far have shown the weekly receipts at each port in detail. Table 37 shows the 1918 summarized figures for all ports combined by sources of supply. It will be noted that the total receipts increased steadily each week from January until June, the maximum being reached in the week ending May 25, when 112,133 tons were received by refiners, of which 91,619 tons were from Cuba. The Cuban receipts increased and decreased in direct relation to the changes in the total, but for the other sources of supply there was less uniformity by weeks, although the same general trend was noticeable. The record for Hawaiian receipts was for the week ending October 19, when 21,902 tons were received, while for Porto Rico, the maximum receipts of 19,810 tons were in the week of May 18. (See Diagram 4.)

Table 38 shows the combined refiners' receipts at all ports weekly in 1919. The total column shows two differences as compared with 1918: first, receipts were in much larger volume all through the year than in 1918; secondly, there were abrupt increases and decreases, reflect-

*Excluding the week of December 13, when there were practically no receipts.

† This Committee was created under the terms of the contract between the Food Administration and the Louisiana producers to distribute the 1918-1919 crop.

ing the temporary stoppages in shipping, brought about by the various marine strikes. The week of largest receipts, 130,177 tons, was that of April 5. The week of May 10 witnessed the largest Cuban receipts, 108,086 long tons. The record for Hawaiian receipts, 28,629 tons, was in the week of August 23, while for Porto Rican sugars the week of July 26, with receipts of 18,772 tons, was the highest point. In both 1918 and 1919 the supplies from the Continental United States were relatively small and were only available for a few weeks of the year.

In terms of the country's normal consumption requirements, the maximum receipts of raw sugars from all sources in any one week represented about ten days' supply in 1918 and about twelve days' supply in 1919; while the average weekly receipts were equal to about five days' supply in 1918 and about seven days' supply in 1919. Of these receipts 490,389 tons* were refined on toll for the British Royal Commission in 1919 and 133,000 tons* in 1918. The domestic production, beet and cane, supplied the balance of the country's needs for consumption.†

Tables 39 and 40 show the combined refiners' weekly receipts summarized by ports and geographical divisions. The maximum receipts for Eastern ports in 1918, 83,779 tons, were for the week of May 18, while in 1919 the maximum, 93,697 tons, was reached in the week of April 5. For the Southern ports the maximum receipts in 1918 were for the week of April 20, when 23,961 tons were received, as against 32,226 tons in 1919 for the week of August 2. The maximum figures for San Francisco have already been noted above.‡ For the whole year 1918, Boston's receipts were equal to about eighteen days' requirements for the United States. New York's receipts equalled about 136 days' requirements, receipts at Philadelphia were sufficient for about forty-three days, while receipts at Savannah, New Orleans and Galveston were about seven days', thirty-eight days' and four days' supplies, respectively.

*See page 107 for details of these toll shipments.

†See page 74 for the proportion contributed by each source of supply.

‡See page 41 above.

TABLE 37
Refiners Weekly Receipts of Raw Sugar Showing Sources, 1918
 Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Jan. 5.....	7,417	....	2,587	578	473	7,188	18,243
Jan. 12.....	21,749	172	154	5,351	1,452	1,710	30,588
Jan. 19.....	37,768	937	7,164	1,254	1,103	257	48,483
Jan. 26.....	37,585	759	2,220	6,872	1,359	159	48,954
Feb. 2.....	24,576	48	8,666	6,204	371	123	39,988
Feb. 9.....	47,928	....	11,563	5,999	120	147	65,757
Feb. 16.....	54,186	....	10,325	8,641	142	....	73,294
Feb. 23.....	52,223	857	8,985	8,628	375	....	71,068
Mar. 2.....	58,794	92	7,775	4,281	250	....	71,192
Mar. 9.....	50,579	314	6,829	11,481	2,321	....	71,524
Mar. 16.....	56,032	1,054	7,024	16,544	3,466	....	84,120
Mar. 23.....	58,187	450	5,139	13,665	3,636	....	81,077
Mar. 30.....	57,739	325	11,738	3,730	1,529	....	75,061
Apr. 6.....	66,399	268	6,268	12,378	22	....	85,335
Apr. 13.....	30,978	105	10,836	690	9,952	....	52,561
Apr. 20.....	87,375	143	5,239	12,164	4,642	....	109,563
Apr. 27.....	67,503	268	10,111	9,785	5,089	....	92,756
May 4.....	57,600	139	5,813	10,990	318	....	74,860
May 11.....	80,874	269	6,446	13,238	....	....	100,827
May 18.....	81,171	....	9,699	19,810	1,129	....	111,809
May 25.....	91,619	2,110	11,752	6,652	....	....	112,133
June 1.....	47,406	496	9,191	11,110	....	7	68,210
June 8.....	64,251	908	20,706	4,919	....	....	90,784
June 15.....	59,932	1,302	11,362	11,848	3,903	....	88,347
June 22.....	75,757	700	10,018	7,811	....	....	94,286
June 29.....	66,345	570	463	4,255	945	....	72,578
July 6.....	51,320	13	5,430	15,467	....	....	72,230
July 13.....	46,997	585	20,162	6,842	....	....	74,586
July 20.....	36,488	196	11,765	9,738	....	....	58,187
July 27.....	46,384	602	8,160	5,067	1,244	....	61,457
Aug. 3.....	22,440	689	6,099	15,214	....	13	44,455
Aug. 10.....	35,466	911	10,794	11,449	....	....	58,620
Aug. 17.....	36,327	912	10,800	2,354	....	....	50,393
Aug. 24.....	35,422	37	17,847	1,031	443	21	54,801
Aug. 31.....	20,214	50	7,251	5,133	....	....	32,648
Sept. 7.....	28,856	363	2,261	9,074	....	....	40,554
Sept. 14.....	28,725	145	7,220	8,642	....	....	44,732
Sept. 21.....	27,290	57	10,274	6,279	....	17	43,917
Sept. 28.....	24,142	2	12,277	3,092	....	253	39,766
Oct. 5.....	25,925	....	13,450	10,189	4,837	27	54,428
Oct. 12.....	19,947	24	18,987	4,185	2,631	....	45,774
Oct. 19.....	26,287	....	21,902	1,901	3,749	2,474	56,313
Oct. 26.....	38,922	....	9,626	10,752	....	....	59,300
Nov. 2.....	29,601	707	19,907	3,539	750	....	54,504
Nov. 9.....	27,435	....	10,577	5,662	560	....	44,234
Nov. 16.....	10,871	....	4,864	141	....	....	15,876
Nov. 23.....	27,573	....	4	190	2,584	2	30,353
Nov. 30.....	26,712	1,175	1,359	....	196	....	29,442
Dec. 7.....	21,201	....	163	1,702	247	....	23,313
Dec. 14.....	5,087	....	....	2,619	258	2,261	10,225
Dec. 21.....	21,226	....	3	329	1,797	6,626	29,981
Dec. 28.....	13,071	423	2,538	....	3,966	3,885	23,883
Dec. 28-31...	4,923	1	2,203	....	1,705	3,273	12,105
Total	2,180,825	19,178	443,996	359,469	67,564	28,443	3,099,475

DIAGRAM 4—REFINERS' WEEKLY RECEIPTS OF RAW SUGAR 1918-1919.

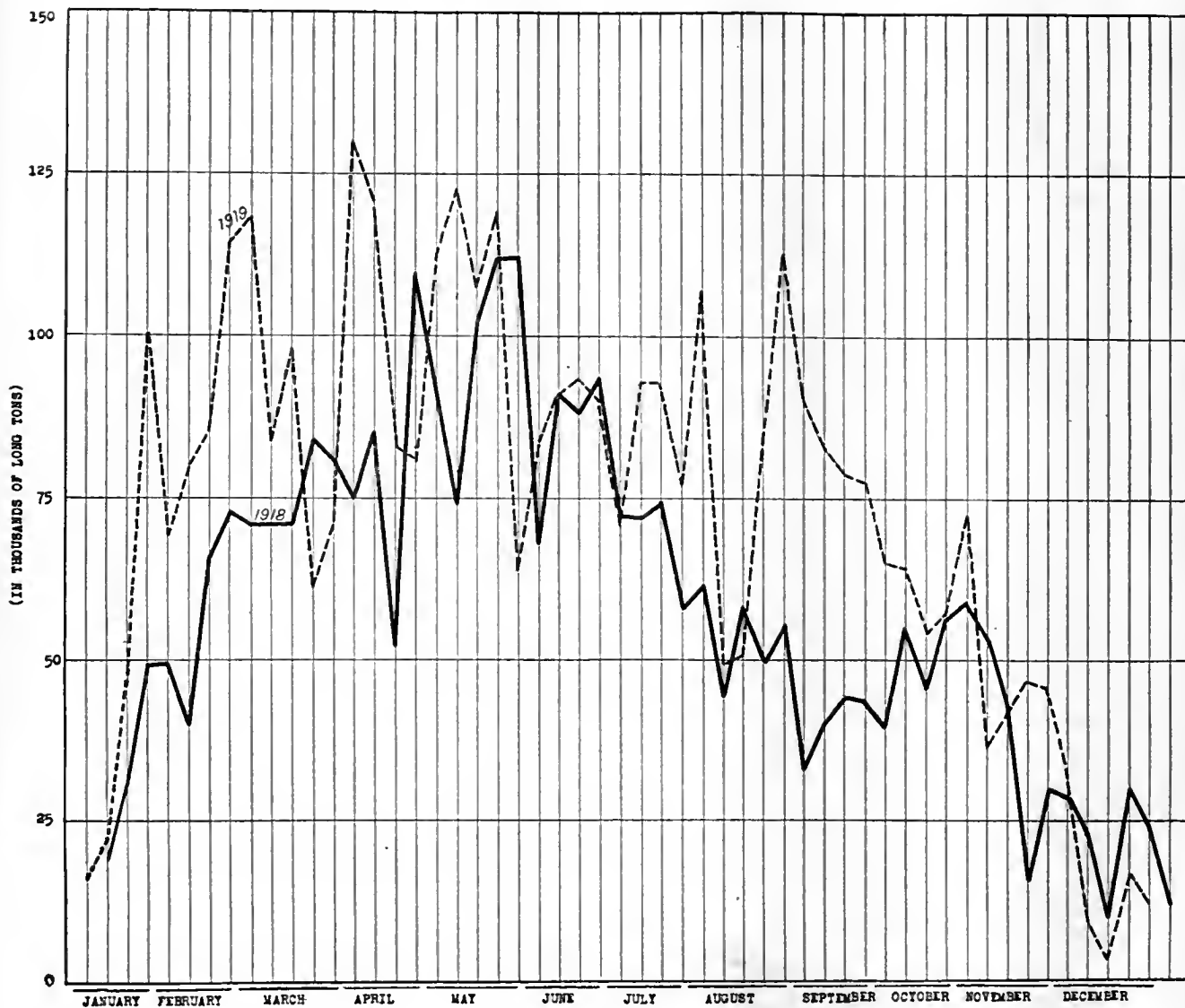


TABLE 38
Refiners' Weekly Receipts of Raw Sugar Showing Sources, 1919
 Unit—Long Tons

Week Ending	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Jan. 1-4....	12,534	....	212	1,508	1,636	....	15,890
Jan. 11.....	10,486	....	3,818	2,322	2,902	2,930	22,458
Jan. 18.....	26,815	....	7,962	6,563	410	5,370	47,120
Jan. 25.....	74,916	1,361	14,439	....	2,678	6,615	100,009
Feb. 1.....	47,083	321	9,688	5,286	3,812	3,725	69,915
Feb. 8.....	53,982	2,673	14,896	4,403	794	3,226	79,974
Feb. 15.....	63,817	600	7,987	6,552	4,170	2,447	85,573
Feb. 22.....	71,851	1,056	11,292	14,083	10,897	4,856	114,035
Mar. 1.....	93,410	504	11,842	8,016	2,064	2,540	118,376
Mar. 8.....	58,467	1,036	11,679	8,046	2,853	1,821	83,902
Mar. 15.....	75,787	383	13,258	7,403	787	487	98,105
Mar. 22.....	36,455	1,123	14,040	8,356	1,263	262	61,499
Mar. 29.....	54,106	4,133	9,054	2,514	992	57	70,856
Apr. 5.....	102,185	800	13,940	9,218	4,032	2	130,177
Apr. 12.....	102,183	1,020	7,788	9,123	719	245	121,078
Apr. 19.....	57,516	1,497	11,069	12,450	497	430	83,459
Apr. 26.....	52,749	2,771	10,770	6,688	7,656	520	81,154
May 3.....	88,520	3,552	17,286	2,938	1,026	210	113,532
May 10.....	108,086	1,012	9,556	2,715	1,536	35	122,940
May 17.....	81,681	2,568	14,650	7,771	1,735	27	108,432
May 24.....	84,952	1,315	19,296	10,469	3,176	21	119,229
May 31.....	52,698	....	7,481	2,092	1,180	7	63,458
June 7.....	61,413	1,180	11,266	8,866	1,165	215	84,105
June 14.....	67,638	487	14,646	6,639	795	715	90,920
June 21.....	72,633	399	10,932	8,068	1,055	389	93,476
June 28.....	64,487	....	10,266	14,004	1,318	44	90,119
July 5.....	38,067	666	20,149	8,762	3,296	....	70,940
July 12.....	65,754	....	14,820	11,092	1,197	....	92,863
July 19.....	66,058	....	19,721	6,548	1,135	....	93,462
July 26.....	50,654	145	7,016	18,772	369	52	77,008
Aug. 2.....	78,833	1,525	17,063	10,077	349	233	108,080
Aug. 9.....	33,347	296	8,919	6,574	....	259	49,395
Aug. 16.....	30,193	....	13,741	5,036	1,623	2	50,595
Aug. 23.....	47,738	....	28,629	7,740	298	....	84,405
Aug. 30.....	88,730	....	12,313	11,861	....	....	112,904
Sept. 6.....	76,136	....	11,721	3,728	....	2	91,587
Sept. 13.....	59,889	....	13,760	9,303	....	....	82,952
Sept. 20.....	59,471	....	3,004	16,547	....	4	79,026
Sept. 27.....	63,722	....	11,298	2,814	....	2	77,836
Oct. 4.....	50,140	....	9,147	5,837	....	9	65,133
Oct. 11.....	55,797	....	7,471	1,463	....	....	64,731
Oct. 18.....	47,537	....	3,296	3,133	....	3	53,969
Oct. 25.....	46,799	....	8,814	1,915	....	....	57,528
Nov. 1.....	70,765	....	861	590	....	....	72,216
Nov. 8.....	35,300	....	....	702	....	2	36,004
Nov. 15.....	39,717	....	....	2,477	....	2	42,196
Nov. 22.....	41,547	1,266	2,853	681	625	....	46,972
Nov. 29.....	45,137	....	308	647	149	10	46,251
Dec. 6.....	29,186	642	2,296	5	....	3	32,132
Dec. 13.....	8,999	149	211	....	....	....	9,359
Dec. 20.....	2,228	983	....	250	....	....	3,461
Dec. 27.....	12,887	312	3,462	....	....	....	16,661
Dec. 31.....	8,275	....	3,400	25	191	....	11,891
Total	2,929,356	35,775	513,386	312,672	70,380	37,779	3,899,348

TABLE
Refiners' Weekly Receipts
Unit—

Week Ending	Boston	New York	Philadelphia	Total Eastern Ports
Jan. 5.....	4,521	6,611	725	11,857
Jan. 12.....	5,035	11,688	6,733	23,456
Jan. 19.....	2,870	17,068	13,445	33,383
Jan. 26.....	3,148	25,184	3,086	31,418
Feb. 2.....	238	18,396	5,786	24,420
Feb. 9.....	2,085	29,565	3,766	35,416
Feb. 16.....	6,004	32,412	8,621	47,037
Feb. 23.....	6,525	27,916	10,746	45,187
Mar. 2.....	4,040	37,043	13,776	54,859
Mar. 9.....	5,265	27,856	9,345	42,466
Mar. 16.....	6,922	38,796	7,882	53,600
Mar. 23.....	2,260	42,175	10,523	54,958
Mar. 30.....	5,448	32,045	11,191	48,684
Apr. 6.....	5,076	35,061	24,525	64,662
Apr. 13.....	1,282	20,753	.....	22,035
Apr. 20.....	10,173	52,004	13,727	75,904
Apr. 27.....	6,666	44,879	12,320	63,865
May 4.....	1,298	44,307	10,884	56,489
May 11.....	5,133	40,772	25,822	71,727
May 18.....	11,054	61,470	11,255	83,779
May 25.....	5,607	49,848	25,833	81,288
June 1.....	3,452	41,328	6,778	51,558
June 8.....	1,977	47,639	12,043	61,659
June 15.....	3,078	48,613	13,880	65,571
June 22.....	6,681	47,184	14,586	68,451
June 29.....	10,441	29,768	17,057	57,266
July 6.....	5,208	37,811	12,202	55,221
July 13.....	.....	30,805	14,144	44,949
July 20.....	5,959	15,399	14,272	35,630
July 27.....	.....	38,857	6,773	45,630
Aug. 3.....	1,975	23,792	3,953	29,720
Aug. 10.....	4,339	23,935	8,409	36,683
Aug. 17.....	1,703	23,825	6,651	32,179
Aug. 24.....	6,088	23,497	6,278	35,863
Aug. 31.....	.....	20,851	148	20,999
Sept. 7.....	1,977	23,997	11,213	37,187
Sept. 14.....	1,482	23,975	6,659	32,116
Sept. 21.....	8,894	18,441	2,020	29,355
Sept. 28.....	13	26,039	530	26,582
Oct. 5.....	.....	27,476	13,794	41,270
Oct. 12.....	3,821	16,087	9,183	29,091
Oct. 19.....	2,820	28,342	11,195	42,357
Oct. 26.....	4,403	37,917	8,152	50,472
Nov. 2.....	5,421	19,879	17,271	42,571
Nov. 9.....	2,467	27,081	6,686	36,234
Nov. 16.....	.....	12,050	1,588	13,638
Nov. 23.....	3,613	13,096	6,489	23,198
Nov. 30.....	1,952	18,985	2,860	23,797
Dec. 7.....	.....	5,525	5,161	10,686
Dec. 14.....	1,679	4,948	1,923	8,550
Dec. 21.....	2,915	17,224	6,073	26,212
Dec. 28.....	2,705	13,245	.....	15,950
Dec. 31.....	.....	7,731	.....	7,731
Total	195,713	1,491,191	477,962	2,164,866

—By Ports, 1918
Long Tons

Savannah	New Orleans	Galveston	Total Southern Ports	San Francisco	Total
....	4,002	....	4,002	2,384	18,243
....	7,132	....	7,132	....	30,588
2,433	4,260	2,175	8,868	6,232	48,483
567	13,637	19	14,223	3,313	48,954
1,567	7,996	....	9,563	6,005	39,988
2,516	17,317	3,201	23,034	7,307	65,757
4,516	11,733	....	16,249	10,008	73,294
2,557	14,539	16	17,112	8,769	71,068
2,352	6,206	....	8,558	7,775	71,192
3,544	13,966	2,705	20,215	8,843	71,524
4,880	12,333	2,982	20,195	10,325	84,120
2,996	12,775	1,821	17,592	8,527	81,077
3,444	9,926	....	13,370	13,007	75,061
1,965	12,699	....	14,664	6,009	85,335
752	9,025	....	9,777	20,749	52,561
313	20,973	2,675	23,961	9,698	109,563
139	14,063	....	14,202	14,689	92,756
247	14,569	43	14,859	3,512	74,860
221	21,342	1,696	23,259	5,841	100,827
134	16,598	2,857	19,589	8,441	111,809
1,612	15,331	6,912	23,855	6,990	112,133
659	11,903	....	12,562	4,090	68,210
823	11,341	41	12,205	16,920	90,784
1,369	10,423	68	11,860	10,916	88,347
305	16,009	....	16,314	9,521	94,286
4,217	10,150	....	14,367	945	72,578
4,586	7,355	....	11,941	5,068	72,230
613	10,526	....	11,139	18,498	74,586
1,439	7,144	2,857	11,440	11,117	58,187
724	6,182	....	6,906	8,921	61,457
1,204	5,895	1,599	8,698	6,037	44,455
2,884	6,977	1,317	11,178	10,759	58,620
976	9,066	....	10,042	8,172	50,393
1,297	522	2,893	4,712	14,226	54,801
1,638	2,654	106	4,398	7,251	32,648
....	1,110	....	1,110	2,257	40,554
1,812	3,584	....	5,396	7,220	44,732
2,998	1,290	....	4,288	10,274	43,917
814	951	1,390	3,155	10,029	39,766
652	2,522	3	3,177	9,981	54,428
1,706	4,243	2,411	8,360	8,323	45,774
509	3,213	....	3,722	10,234	56,313
592	1,977	2,453	5,022	3,806	59,300
1,105	....	92	1,197	10,736	54,504
419	....	....	419	7,581	44,234
....	....	....	....	2,238	15,876
1,912	2,655	....	4,567	2,588	30,353
....	4,090	....	4,090	1,555	29,442
....	12,261	....	12,261	366	23,313
1,485	....	....	1,485	190	10,225
1,571	398	....	1,969	1,800	29,981
1,429	....	....	1,429	6,504	23,883
466	....	....	466	3,908	12,105
76,959	414,863	42,332	534,154	400,455	3,099,475

TABLE
Refiners' Weekly Receipts
Unit—

Week Ending	Boston	New York	Philadelphia	Total Eastern Ports
Jan. 1-4.....	3,676	5,200	2,585	11,461
Jan. 11.....	....	11,082	1,512	12,594
Jan. 18.....	2,900	26,118	10,376	38,494
Jan. 25.....	9,381	47,192	14,820	71,393
Feb. 1.....	....	26,765	14,909	41,674
Feb. 8.....	7,663	38,052	9,523	55,238
Feb. 15.....	3,544	37,532	15,720	56,796
Feb. 22.....	7,442	54,633	16,254	78,329
Mar. 1.....	11,726	61,085	18,404	91,215
Mar. 8.....	4,044	30,999	16,624	51,667
Mar. 15.....	6,141	39,791	23,384	69,316
Mar. 22.....	6,094	24,326	1,645	32,065
Mar. 29.....	2,107	32,800	15,299	50,206
Apr. 5.....	12,831	50,296	30,570	93,697
Apr. 12.....	8,474	48,788	33,145	90,407
Apr. 19.....	4,670	42,925	10,087	57,682
Apr. 26.....	2,949	39,803	8,737	51,489
May 3.....	12,334	45,927	29,210	87,471
May 10.....	2,540	53,581	25,524	81,645
May 17.....	6,671	60,233	14,030	80,934
May 24.....	17,753	38,404	29,731	85,888
May 31.....	....	39,660	4,196	43,856
June 7.....	8,840	42,399	7,980	59,219
June 14.....	6,133	37,513	20,006	63,652
June 21.....	....	51,425	12,024	63,449
June 28.....	7,032	39,293	17,123	63,448
July 5.....	3,580	33,444	13,047	50,071
July 12.....	10,334	47,294	15,927	73,555
July 19.....	3,129	50,848	20,533	74,510
July 26.....	5,987	42,449	8,173	56,609
Aug. 2.....	1,872	45,980	13,811	61,663
Aug. 9.....	4,680	19,868	13,451	37,999
Aug. 16.....	3,191	22,406	4,723	30,320
Aug. 23.....	3,344	42,952	23,775	70,071
Aug. 30.....	8,768	52,057	26,514	87,339
Sept. 6.....	9,208	44,945	19,395	73,548
Sept. 13.....	11,568	37,781	10,536	59,885
Sept. 20.....	1,612	42,087	14,563	58,262
Sept. 27.....	8,576	37,621	12,599	58,796
Oct. 4.....	3,041	26,494	14,694	44,229
Oct. 11.....	8,910	33,051	6,991	48,952
Oct. 18.....	5,474	27,534	12,639	45,647
Oct. 25.....	5,131	24,934	13,989	44,054
Nov. 1.....	4,647	40,254	17,689	62,590
Nov. 8.....	2,719	25,136	2,174	30,029
Nov. 15.....	5,199	26,667	162	32,028
Nov. 22.....	2,549	25,406	6,912	34,867
Nov. 29.....	2,873	29,100	12,282	44,255
Dec. 6.....	2,118	15,365	9,835	27,318
Dec. 13.....	2,960	149	....	3,109
Dec. 20.....	....	3,377	....	3,377
Dec. 27.....	125	16,449	16,574
Dec. 28-31.....	11,675	11,675
Total for Year.....	275,640	1,851,145	697,832	2,824,617

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—By Ports, 1919

Long Tons

Savannah	New Orleans	Galveston	Total Southern Ports	San Francisco	Total
....	2,581	....	2,581	1,848	15,890
....	3,144	....	3,144	6,720	22,458
1,155	....	....	1,155	7,471	47,120
1,240	11,596	2,500	15,336	13,280	100,009
1,527	13,832	....	15,359	12,882	69,915
1,532	6,467	3,724	11,723	13,013	79,974
2,476	18,293	....	20,769	8,008	85,573
4,079	15,795	4,540	24,414	11,292	114,035
2,517	12,360	....	14,877	12,284	118,376
1,150	16,443	2,228	19,821	12,414	83,902
3,242	10,512	1,777	15,531	13,258	98,105
3,452	11,931	11	15,394	14,040	61,499
1,948	9,252	....	11,200	9,450	70,856
1,138	16,779	3,437	21,354	15,126	130,177
1,883	20,507	....	22,390	8,281	121,078
2,099	13,321	53	15,473	10,304	83,459
1,845	13,210	....	15,055	14,610	81,154
5,173	10,027	....	15,200	10,861	113,532
2,777	24,643	3,013	30,433	10,862	122,940
724	14,403	2,455	17,582	9,916	108,432
2,379	16,003	154	18,536	14,805	119,229
3,719	4,625	3,571	11,915	7,687	63,458
4,439	10,735	52	15,226	9,660	84,105
3,210	12,362	3,214	18,786	8,482	90,920
438	18,068	....	18,506	11,521	93,476
4,832	7,426	3,697	15,955	10,716	90,119
121	10,521	21	10,663	10,206	70,940
4,701	5,411	75	10,187	9,121	92,863
732	6,397	2,768	9,897	9,055	93,462
1,113	13,681	....	14,794	5,605	77,008
3,014	20,507	8,705	32,226	14,191	108,080
3,268	2,595	....	5,863	5,533	49,395
2,214	8,103	418	10,735	9,540	50,595
2,101	9,193	77	11,371	2,963	84,405
1,767	16,085	....	17,852	7,713	112,904
1,214	8,824	....	10,038	8,001	91,587
3,202	10,810	....	14,012	9,055	82,952
562	11,082	6,116	17,760	3,004	79,026
5,116	8,289	....	13,405	5,635	77,836
879	11,705	172	12,756	8,148	65,133
753	7,467	88	8,308	7,471	64,731
....	5,026	....	5,026	3,296	53,969
2,465	2,195	....	4,660	8,814	57,528
....	8,765	....	8,765	861	72,216
....	5,975	....	5,975	....	36,004
....	10,168	....	10,168	....	42,196
....	6,886	2,366	9,252	2,853	46,972
....	1,996	....	1,996	....	46,251
....	2,518	....	2,518	2,296	32,132
....	2,237	3,802	6,039	211	9,359
....	84	....	84	....	3,461
....	....	87	87	....	16,661
....	25	....	25	191	11,891
92,196	510,860	59,121	662,177	412,554	3,899,348

General Summary of Refiners' Receipts—Monthly Figures

The figures in the preceding tables of this chapter have been all for weekly periods. It is often essential to utilize monthly and annual figures. In the following tables the figures are compiled by months and by years to meet this requirement.

Table 33 shows refiners' receipts by months for 1918 and 1919, for each port. The largest receipts in 1918 were for the month of May, when 445,838 tons were received at refineries, while in 1919 the peak month came a month earlier, 466,066 tons being received in April.

TABLE
Refiners' Monthly Receipts of Raw Cane Sugar
Unit—

Month	Boston	New York	Philadelphia	Total Eastern
January	15,812	76,042	28,018	119,872
February	18,653	120,370	36,422	175,445
March	19,895	150,343	41,185	211,423
April	23,197	170,809	51,799	245,805
May	26,544	219,613	79,345	325,502
June	22,177	173,204	57,566	252,947
July	13,061	135,138	47,622	195,821
August	12,211	103,634	25,208	141,053
September	12,366	101,009	28,403	141,778
October	10,884	118,772	45,614	175,270
November	13,614	73,584	23,623	110,821
December	7,299	48,673	13,157	69,129
Total.....	195,713	1,491,191	477,962	2,164,866

TABLE 41
Refiners' Monthly Receipts of Raw Cane Sugar
Unit—

Month	Boston	New York	Philadelphia	Total Eastern
January	15,057	116,357	44,202	175,616
February	30,375	191,302	59,901	281,578
March	18,309	139,144	62,320	219,773
April	35,632	207,472	95,884	338,988
May	32,590	200,917	83,978	317,485
June	26,556	177,526	58,365	262,447
July	18,326	201,274	68,262	287,862
August	22,099	149,128	70,460	241,687
September	33,987	174,781	62,552	271,320
October	24,160	139,920	60,543	224,623
November	13,340	106,309	21,530	141,179
December	5,209	47,015	9,835	62,059
Total	275,640	1,851,145	697,832	2,824,617

These were not the months, however, of the largest receipts for all individual ports, since in 1918, Savannah obtained its maximum supplies in March and San Francisco in April, while in 1919 the record months for the ports of Savannah, Galveston and San Francisco were June, July and March, respectively. It is of interest to note that every port received sugars, in varying amounts, for each month in the year, both in 1918 and 1919, except the minor ports of Savannah and Galveston, the former receiving no sugar in November and December, 1919, the latter receiving none in the same months of 1918. (See Diagram 5.)

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—By Ports and Geographical Divisions, 1918

Long Tons

Savannah	New Orleans	Galveston	Total Southern	San Francisco	Total, All Ports
4,567	34,558	2,194	41,319	17,934	179,125
11,941	52,264	3,217	67,422	29,518	272,385
14,864	49,000	7,508	71,372	45,043	327,838
3,251	59,340	2,675	65,266	51,145	362,216
2,791	77,163	11,508	91,462	28,874	445,838
6,714	47,923	109	54,746	38,302	345,995
8,371	36,338	2,894	47,603	43,604	287,028
6,990	19,983	5,878	32,851	46,445	220,349
5,624	7,507	1,393	14,524	29,780	186,082
4,364	11,383	4,956	20,703	43,080	239,053
2,531	6,745	....	9,276	13,962	134,059
4,951	12,659	....	17,610	12,768	99,507
76,959	414,863	42,332	534,154	400,455	3,099,475

—Continued

—By Ports and Geographical Divisions, 1919

Long Tons

Savannah	New Orleans	Galveston	Total Southern	San Francisco	Total, All Ports
3,922	31,153	2,500	37,575	42,201	255,392
10,604	52,915	8,264	71,783	44,597	397,958
9,792	58,385	4,016	72,193	51,834	343,800
12,138	63,033	3,490	78,661	48,417	466,066
9,599	60,238	9,193	79,030	51,363	447,878
12,919	54,489	6,963	74,371	43,521	380,339
9,681	50,345	11,569	71,595	38,882	398,339
9,350	35,710	495	45,555	31,903	319,145
10,094	41,796	6,116	58,006	26,361	355,687
4,097	32,897	260	37,254	27,924	289,801
....	25,025	2,366	27,391	2,853	171,423
....	4,874	3,889	8,763	2,698	73,520
92,196	510,860	59,121	662,177	412,554	3,899,348

Table 42 shows refiners' monthly receipts by sources of supply for 1918 and 1919. In 1918 the heaviest receipts of Cuban sugars were in the month of May. There was a constant and regular increase in the monthly receipts up to that month, and just as constant and regular a decline thereafter. In 1919 there was considerably less regularity in the movement of Cuban sugars, reflecting undoubtedly the marine strikes on the Atlantic and Gulf seaboard. Thus, for instance, Cuban receipts dropped from 283,060 tons in February to 248,340 tons in March, and again in August dropped to 214,451 tons as against 274,441 tons in July, but increased to 281,635 tons in September. Receipts from Hawaii and Porto Rico in 1919 were much below the 1918 record for the last quarter of the year, but the increased volume of Cuban receipts neutralized this difference except for December, when refiners' receipts were only 73,520 tons, as compared with 99,507 in December, 1918. The maximum receipts from Hawaii came late in the year. In 1918 the October receipts of 78,820 tons were largest, while in 1919 the peak was reached in August, when receipts were 70,566 tons. The largest arrivals from Porto Rico and St. Croix were in the months of May, 1918, and July, 1919, when 56,172 tons and 49,986 tons were received respectively.

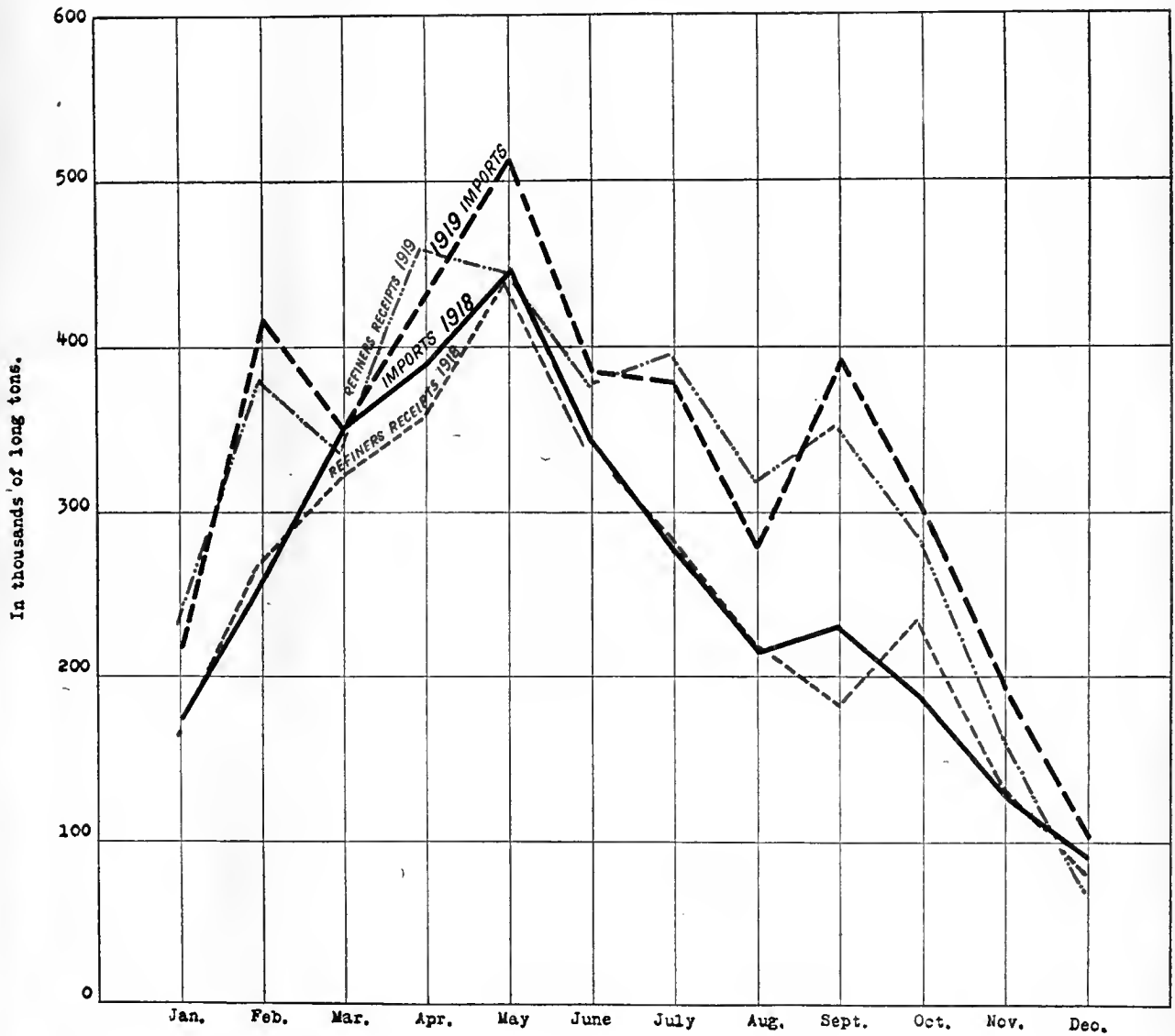
TABLE 42
Refiners' Monthly Receipts of Raw Sugars, 1918
(As reported by refiners in long tons)

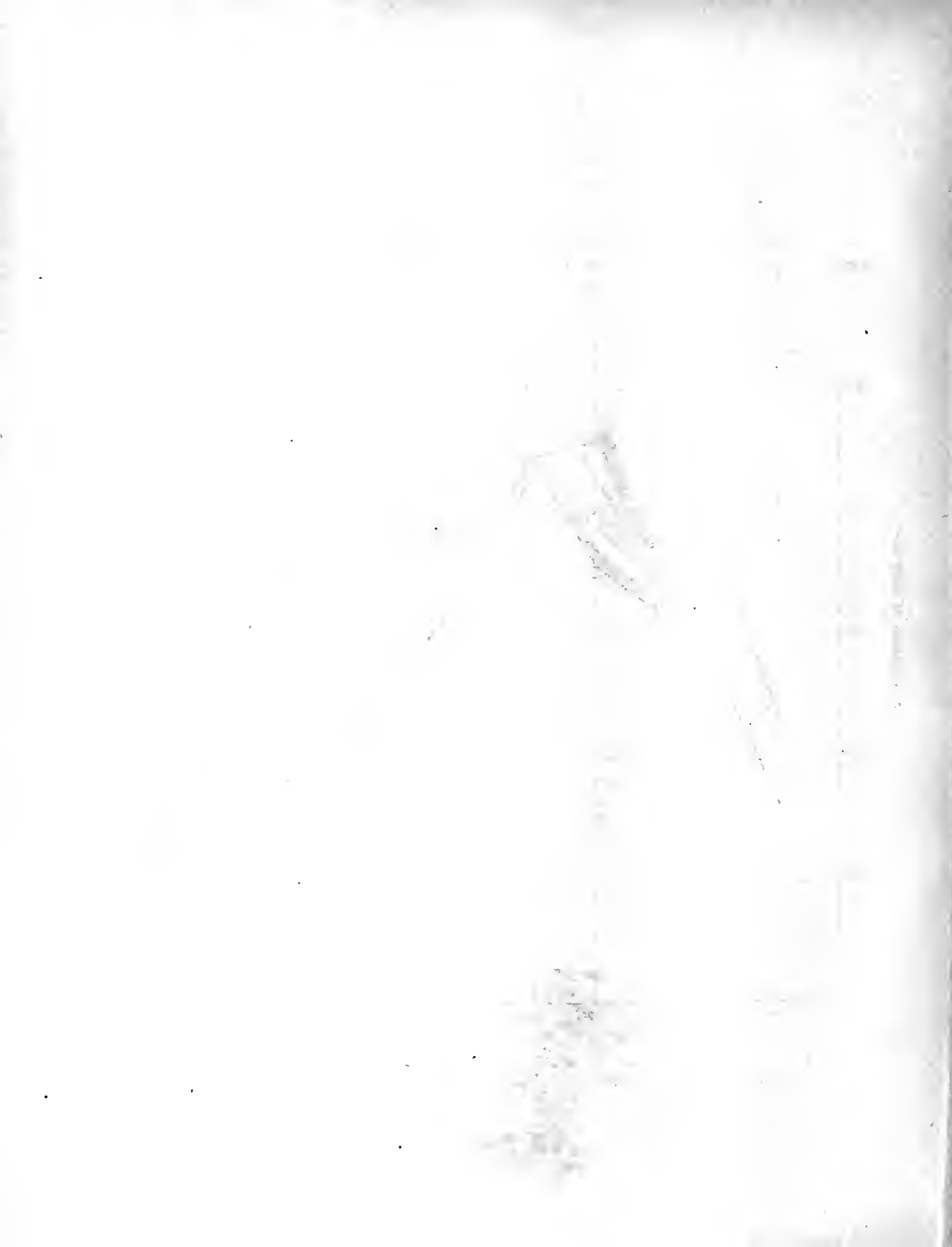
Month	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
January	124,910	1,916	20,791	17,354	4,758	9,396	179,125
February	205,600	949	34,307	30,454	887	188	272,385
March	234,252	2,143	35,071	45,420	10,952	....	327,838
April	267,377	784	33,705	40,645	19,705	....	362,216
May	343,548	3,014	41,650	56,172	1,447	7	445,838
June	266,285	3,480	42,549	28,833	4,848	....	345,995
July	192,999	1,661	45,579	45,532	1,244	13	287,028
August	138,059	2,334	52,729	26,763	443	21	220,349
September ...	118,312	567	37,084	29,822	....	297	186,082
October	117,230	731	78,820	27,831	11,967	2,474	239,053
November ...	106,745	1,175	16,804	5,993	3,340	2	134,059
December	65,508	424	4,907	4,650	7,973	16,045	99,507
Total	2,180,825	19,178	443,996	359,469	67,564	28,443	3,099,475

Refiners' Monthly Receipts of Raw Sugars, 1919
(As reported by refiners in long tons)

Month	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
January	171,834	1,682	36,119	15,679	11,438	18,640	255,392
February	283,060	4,833	46,017	33,054	17,925	13,069	397,958
March	248,340	6,945	50,703	29,371	5,895	2,546	343,800
April	354,953	9,172	49,997	37,365	13,172	1,407	466,066
May	352,092	5,097	59,167	23,047	8,385	90	447,878
June	276,653	2,066	52,497	41,964	5,796	1,363	380,339
July	274,441	2,336	66,418	49,986	4,883	275	398,339
August	214,451	296	70,566	31,559	1,921	352	319,145
September ...	281,635	....	41,448	32,596	....	8	355,687
October	248,601	....	27,924	13,264	....	12	289,801
November ...	161,701	1,266	3,161	4,507	774	14	171,423
December	61,595	2,082	9,369	280	191	3	73,520
Total	2,929,356	35,775	513,386	312,672	70,380	37,779	3,899,348

DIAGRAM 5—IMPORTS OF CANE SUGAR AND REFINERS' RECEIPTS, 1918-1919





It will be noted that the three principal sources of supply, Cuba, Hawaii, and Porto Rico, provided some sugars for the United States refineries for each month in both years and there were only a few months when at least a few tons did not arrive from the minor sources of supply. Expressed in terms of the nation's sugar consumption, the average monthly receipts by refiners were equal to about twenty-four days' requirements in 1918 and about thirty days' requirements in 1919. The minimum arrivals at refineries in any month in the two years (December, 1919) were equal to only a week's requirements, but the maximum arrivals (April, 1919) represented about forty-three days' requirements.

Refiners' receipts of raw sugars form all but a negligible portion of all imports of sugar. The small quantities brought into the United States without passing through refineries are utilized mainly by some of the sugar-using industries. It is of interest to determine the quantity of these sugars. This is possible through a comparison of the above refiners' figures with the import figures of the Department of Commerce. In Table 43 the monthly imports of sugar are given, compiled from the "Monthly Summaries" of the Department of Commerce. To these imports the monthly shipments of sugar from Porto Rico and Hawaii to the United States have been added in order to make a comparison possible with the refiners' figures given above, although there is obvious inaccuracy in combining figures of receipts at ports of the United States from some sources of supply with figures obtained at overseas ports of cargoes destined for the United States. The error is relatively small, however, when yearly periods are considered. Thus, for example, the total shipments of raws from Hawaii to the United States in 1918 were reported at 433,678 tons, while refiners reported receipts of 443,996 tons, or about 10,000 tons more, and in 1919 there was a similar difference of about 6,000 tons. (See Diagram 5.)

Aside from this obvious discrepancy, the two sets of figures are generally consistent, any slight differences arising from variations in dates and from the fact that some sugars pass directly to the trade without refining. That the amount not passing through refineries was relatively negligible is clearly shown in Table 44* which gives the two sets of figures in parallel columns for comparison. The amount for 1918 was only 27,011 tons or under one per cent. of the total receipts and for 1919, only 104,088 tons or 2.6 per cent.** It is not possible to determine the monthly imports of these sugars, since there are some months when refiners' receipts exceed the total imports, a contradiction due to minor differences in dates which are eliminated when quarterly, semi-annual, or annual periods are considered.

* In order to make the two sets of figures properly comparable, the refiners' receipts from the Continental United States have been subtracted from the totals reported by them for each month, since the Department of Commerce import figures do not, of course, include receipts from the interior.

** In the present year (1920), the shortage of sugar and the high price ruling in the United States in the first half of the year attracted larger quantities of these sugars to this country than normal.

TABLE 43
Imports of Cane Sugar From All Sources for 1918-19
 (Figures From Monthly Summary of Foreign Commerce)
 (Long Tons)*

Month	Central America	Cuba	Dominican Republic	Peru	Other South America	Philippines	Other Foreign Countries	Porto Rico	Hawaii	Total
1918										
January	75	131,516	196	2,143	998	2,194	2,467	21,215	13,898	174,702
February	52	203,976	1	252	932	3,344	28	31,618	21,420	261,623
March	1,477	247,125	....	....	468	7,991	337	47,321	44,692	349,411
April	664	282,283	....	....	292	20,396	324	42,508	44,787	391,254
May	1,257	344,535	....	3	4,212	2,427	3,550	49,108	41,109	446,201
June	624	249,602	....	....	853	963	2,404	45,811	43,571	343,828
July	536	195,406	....	....	875	1,302	1,494	35,769	41,287	276,669
August	533	145,629	1,860	67	886	802	2,004	20,173	42,017	213,971
September	21	121,900	101	....	....	771	16	33,885	75,290	231,984
October	....	121,179	....	....	60	11,280	32	19,271	36,821	188,643
November	....	97,538	....	....	642	3,529	34	6,530	19,835	128,108
December	....	70,779	....	....	455	5,538	1,396	4,527	8,951	91,646
Total	5,239	2,211,468	2,158	2,465	10,673	60,537	14,086	357,736	433,678	3,098,040
1919										
January	1	162,856	....	1,365	33	10,824	57	17,293	24,477	216,906
February	33	297,880	....	3,200	1,249	26,253	1,318	41,795	43,848	415,576
March	329	253,255	....	....	1,246	2,266	6,022	35,464	50,721	349,303
April	2,489	316,488	....	....	705	9,311	15,756	28,634	59,653	433,036
May	156	402,395	....	....	1,461	13,928	4,671	33,029	56,327	511,967
June	954	265,012	....	....	1,695	8,371	5,318	37,597	66,842	385,789
July	2,406	278,961	33	....	....	5,384	4,324	36,521	51,134	378,763
August	304	171,747	....	....	....	1,981	206	40,027	67,854	282,119
September	7	316,318	....	....	....	....	31	37,056	40,321	393,733
October	134	252,228	....	....	13	....	2,656	13,012	31,527	299,570
November	266	181,603	2,093	831	1	....	209	2,768	6,098	193,869
December	554	86,142	1,441	2,177	1,667	196	2,980	1,979	7,890	105,026
Total	7,633	2,984,885	3,567	7,573	8,070	78,514	43,548	325,175	506,692	3,965,657

*Converted into long tons from the figures in pounds, as given by the Department of Commerce.

TABLE 44

Comparison Showing Differences Between Monthly Import Figures of the Department of Commerce and the Figures of Refiners' Receipts

Unit—Long Tons

Month	1918		1919	
	Imports As Reported by Department of Commerce	Refiners' Receipts As Reported by Int. Sugar Committee*	Imports As Reported by Department of Commerce*	Refiners' Receipts As Reported by U. S. S. E. Board*
January	174,702	169,729	216,906	236,752
February	261,624	272,197	415,576	384,889
March	349,411	327,838	349,303	341,254
April	391,254	362,216	433,036	464,659
May	446,201	445,831	511,967	447,788
June	343,828	345,995	385,789	378,976
July	276,669	287,015	378,763	398,064
August	213,972	220,328	282,119	318,793
September	231,984	185,785	393,733	355,679
October	188,643	236,578	299,570	289,789
November	128,108	134,057	193,869	171,409
December	91,646	83,462	105,026	73,517
Total.....	3,098,042	3,071,031*	3,965,657	3,861,569*

General Summary of Refiners' Receipts (Annual Figures)

Table 45 summarizes refiners' receipts of raw sugars for the whole year 1918 by ports and kinds. Out of total receipts for the year of 3,099,475 long tons, 2,180,825 tons, or 70.36 per cent., came from Cuba. Hawaii was the second largest contributor, with a total for the year of 443,996 tons, or 14.32 per cent. Porto Rico and St. Croix contributed 359,469 tons, or 11.6 per cent. of the total, almost 100,000 tons less than Hawaii. The other sources of supply were relatively negligible, the Philippines supplying but 2.18 per cent. and the various foreign sources and the Continental United States each less than 1 per cent.

Table 46 gives corresponding figures for 1919. Receipts from Cuba reached the astounding figure of 2,929,356 long tons, or 75.12 per cent. of the total, as against 2,180,825 tons in 1918, or 70.36 per cent. of the total. Hawaiian supplies in 1919 were also considerably above those of 1918, being 513,386 tons, as compared with 443,996 in 1918. A decline was noticeable for Porto Rico and St. Croix, receipts being 312,672 tons in 1919, as against 359,469 in 1918. The minor sources of supply all showed increases, which were, however, relatively negligible in relation to the total. The total receipts from all sources for 1919 reached the record total of 3,899,348 tons, as against 3,099,475 tons in 1918. Of these amounts, 490,389 tons were received for the account of the Royal Commission in 1919, as against 133,000 tons in 1918.

Table 47 compares the refiners' receipts of raw sugars at the various ports for the years 1913 through 1919. The figures prior to 1918 are compiled from trade journals, no official figures being available for those years. It will be seen that in 1919 all the ports received more raw sugars than in any previous year except New York, which imported about 40,000 tons more in 1916, and San Francisco, which imported about 12,000 tons more in 1917. A comparison of the figures for the years 1919 and 1913 are rather significant. Of the important refining centers, Philadelphia shows the greatest increase in volume of receipts in 1919 over 1913, both relatively and absolutely, the 1919 figure being almost twice that of 1913; San Francisco follows closely, the

* Excluding receipts from Continental United States, which are not included in the Department of Commerce figures.

TABLE 45

Refiners' Receipts of Raw Sugar From Different Sources from January 1 to December 31, 1918
Unit—Long Tons

	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Boston	177,012	194	....	11,217	251	7,039	195,713
New York	1,123,272	12,761	53,538	284,480	3,582	13,558	1,491,191
Philadelphia	416,403	....	51,139	7,391	2,595	434	477,962
Total Eastern Ports....	1,716,687	12,955	104,677	303,088	6,428	21,031	2,164,866
Savannah	75,922	....	....	1,009	....	28	76,959
New Orleans	345,884	6,223	....	55,372	....	7,384	414,863
Galveston	42,332	....	....	....	....	....	42,332
Total Southern Ports....	464,138	6,223	....	56,381	....	7,412	534,154
San Francisco .....	....	....	339,319	....	61,136	....	400,455
Total All Ports.....	2,180,825	19,178	443,996	359,469	67,564	28,443	3,099,475

(Percentages of Total Received at Each Port From Each Source)

	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Boston	90.44	.10	....	5.73	.13	3.60	100.00
New York	75.32	.86	3.60	19.07	.24	.91	100.00
Philadelphia	87.12	....	10.70	1.55	.54	.09	100.00
Total Eastern Ports....	79.30	.60	4.83	14.00	.30	.97	100.00
Savannah	98.65	....	....	1.31	....	.04	100.00
New Orleans	83.37	1.50	....	13.35	....	1.78	100.00
Galveston	100.00	....	....	....	....	....	100.00
Total Southern Ports...	86.89	1.16	....	10.56	....	1.39	100.00
San Francisco .....	....	....	84.73	....	15.27	....	100.00
Total All Ports.....	70.36	.62	14.32	11.60	2.18	.92	100.00

increase there being 59.5 per cent. Boston and New Orleans also show substantial improvement in tonnage, although the relative amount of increase is not great. The greatest relative increase is shown for the port of Galveston, where receipts in 1919 were more than double those of 1913, but the total tonnage at this port is relatively insignificant. Receipts at Savannah, where a sugar refining industry has been developed only since 1917, outstripped receipts at the port of Galveston in 1919 by about 30,000 tons. Curiously enough, the smallest relative increase since 1913 is shown for New York, which port, however, still received in 1919 nearly half of the total for all ports.

The port of New York has not shared proportionately in the volume of increased tonnage, since, in 1913, 57.97 per cent. of the total raw sugar imports came to this port, as compared with only 47.47 per cent. in 1919. But Philadelphia increased her portion of the total from 11.93 per cent. in 1913 to 17.9 per cent. in 1919, while the southern ports increased from 13.62 per cent. in 1913 to 16.98 per cent. in 1919, and San Francisco increased from 8.72 per cent. to 10.58 per cent.

TABLE 46

Refiners' Receipts of Raw Sugar From Different Sources From January 1 to December 31, 1919
Unit—Long Tons

	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Boston	231,234	....	....	43,438	968	....	275,640
New York	1,529,286	27,637	84,792	173,180	25,262	10,988	1,851,145
Philadelphia	619,959	....	60,190	17,683	....	....	697,832
Total Eastern Ports....	2,380,479	27,637	144,982	234,301	26,230	10,988	2,824,617
Savannah	89,499	....	....	2,697	....	....	92,196
New Orleans	401,379	8,138	....	75,674	....	25,669	510,860
Galveston	57,999	....	....	....	....	1,122	59,121
Total Southern Ports...	548,877	8,138	....	78,371	....	26,791	662,177
San Francisco .....	....	....	368,404	....	44,150	....	412,554
Total All Ports	2,929,356	35,775	513,386	312,672	70,380	37,779	3,899,348

(Percentages of Total Received at Each Port From Each Source)

	Cuba	Other Foreign Countries	Hawaii	Porto Rico and St. Croix	Philippines	Continental United States	Total
Boston	83.89	....	....	15.76	.35	....	100.00
New York	82.61	1.49	4.58	9.36	1.37	.59	100.00
Philadelphia	88.84	....	8.63	2.53	....	....	100.00
Total Eastern Ports....	84.27	.98	5.13	8.30	.93	.39	100.00
Savannah	97.07	....	....	2.93	....	....	100.00
New Orleans	78.57	1.59	....	14.81	....	5.03	100.00
Galveston	98.10	....	....	....	....	1.90	100.00
Total Southern Ports...	82.89	1.23	....	11.83	....	4.05	100.00
San Francisco .....	....	....	89.30	....	10.70	....	100.00
Total All Ports.....	75.12	.92	13.17	8.02	1.80	.97	100.00

So much then for refiners' receipts and imports. Before these imported sugars pass into consumption all but a small fraction is refined at the various coast refineries. This phase of the subject is treated in the following chapter.

TABLE 47
Comparison of Receipts at Various Ports—Prewar and War Years
Unit—Long Tons

Port	1913	1914	1915	1916	1917	1918	1919
Boston	230,221	215,171	215,870	222,328	234,621	195,713	275,640
New York	1,719,064	1,839,887	1,845,927	1,893,589	1,607,638	1,491,191	1,851,145
Philadelphia	353,719	492,446	500,889	598,134	503,845	477,962	697,832
Total Eastern	2,303,004	2,547,504	2,562,686	2,714,051	2,346,104	2,164,866	2,824,617
Savannah .....	.....	.....	.....	.....	19,963	76,959	92,196
New Orleans	377,079	358,380	267,751	303,469	427,420	414,863	510,860
Galveston	26,571	31,310	37,672	41,067	39,063	42,332	59,121
Total Southern	403,650	389,690	305,423	344,536	486,446	534,154	662,177
San Francisco	258,688	308,603	320,295	354,605	424,487	400,455	412,554
Total All Ports.....	2,965,342	3,245,797	3,188,404	3,413,192	3,257,037	3,099,475	3,899,348

Percentages of Totals Received At Each Port				
	1913	1918	1919	
Boston	7.76	6.31	7.07	
New York	57.97	48.11	47.47	
Philadelphia	11.93	15.42	17.90	
Total Eastern	77.66	69.84	72.44	
Savannah .....	.....	2.48	2.36	
New Orleans	12.72	13.39	13.10	
Galveston .....	.90	1.37	1.52	
Total Southern	13.62	17.24	16.98	
San Francisco	8.72	12.92	10.58	
Total All Ports.....	100.00	100.00	100.00	

CHAPTER III

PRODUCTION OF REFINED SUGAR—REFINERS' MELTINGS

In the previous chapter figures have been presented showing the refiners' weekly and monthly receipts of raw sugars. In this chapter a statistical record is given of the melting of these raw sugars, that is, of the process of conversion from raw to refined.

Before presenting the figures showing actual production in 1918 and 1919, a few words about the capacity of the refineries will be pertinent. The daily melting capacities at the various refining ports at the close of the year 1919 were as follows:

TABLE 48
Melting Capacity at Each Refining Port

Port	Daily Melting Capacity (Short Tons)
Boston	1,520
New York	9,950
Philadelphia	3,800
Savannah	450
New Orleans	2,750
Galveston	230
San Francisco	2,200
	20,900

The largest consumption record in the United States was in the year 1919, when the average per day was about 12,585 tons. The daily capacity of the cane sugar refineries is thus about 166 per cent. of the record daily consumption and is about twice the normal daily consumption.* There is therefore sufficient refining capacity in the United States to supply the country, even in those months of the year when the demand for sugar, owing to canning and preserving requirements, is twice the normal. A more intricate question than the relation between the country's requirements and the refining capacity of the country is the problem of the geographical distribution of the refining capacity of the country. Limitation of space and time make such an analysis impossible here, but it is hoped that the basic figures here shown will lead to further inquiry in the matter.

It will be of interest to note to what extent the actual operation of the refineries approximated the capacity in 1918 and 1919. Table 49 shows refiners' weekly meltings for 1918 at each refining center. As is to be expected, the meltings increase and decrease generally in relation to the receipts of raws. For Boston the peak production week in 1918 was that of May 4, when 5,643 tons were melted. From the last week in February to the beginning of August, a period of five months, weekly meltings at this port averaged about 5,000 tons. Only at rare intervals during the year was there a weekly production less than 2,000 tons. The total for the year was 194,982 tons, yielding a weekly average of about 3,750 tons. (See Diagram 6.)

*In addition to these refineries there are the beet sugar factories of the United States and the cane sugar factories in Louisiana, which manufacture sugar for direct consumption.

TABLE 49
Refiners' Weekly Meltings, 1918
 Unit—Long Tons

Week Ending	Boston	New York	Phila- delphia	Savannah	New Orleans	Galveston	San Fran- cisco	Total
Jan. 5.....	3,021	4,084	424	....	4,795	....	2,188	14,512
Jan. 12.....	3,774	12,127	3,482	....	4,881	....	6,437	30,701
Jan. 19.....	2,401	12,030	7,392	782	6,259	671	4,371	33,906
Jan. 26.....	2,642	19,863	6,442	2,092	7,278	1,523	3,978	43,818
Feb. 2.....	2,847	23,996	7,690	1,638	8,734	....	4,667	49,572
Feb. 9.....	2,806	27,572	4,793	1,907	11,474	1,049	5,140	54,741
Feb. 16.....	1,791	32,713	8,050	1,934	12,245	1,073	5,222	63,028
Feb. 23.....	4,161	26,604	10,263	2,045	14,066	1,095	6,914	65,148
Mar. 2.....	5,135	31,330	10,977	1,954	11,886	....	9,189	70,471
Mar. 9.....	5,191	34,659	9,818	2,024	12,465	845	8,863	73,865
Mar. 16.....	5,240	34,261	8,093	2,284	12,915	1,470	9,257	73,520
Mar. 23.....	5,258	39,116	10,339	2,176	12,482	1,486	9,654	80,511
Mar. 30.....	5,265	33,697	11,295	2,416	9,756	1,416	9,810	73,655
Apr. 6.....	2,201	37,007	10,272	1,937	11,013	1,381	9,703	73,514
Apr. 13.....	5,325	24,468	10,461	2,166	10,579	906	10,322	64,227
Apr. 20.....	4,831	41,052	9,233	1,746	11,025	741	9,109	77,737
Apr. 27.....	5,541	42,973	12,934	1,542	10,366	1,365	4,670	79,391
May 4.....	5,643	45,267	13,420	1,483	10,649	616	10,916	87,994
May 11.....	5,218	42,236	14,107	1,541	11,222	983	9,358	84,665
May 18.....	5,362	46,439	13,720	1,776	11,914	1,193	10,301	90,705
May 25.....	4,859	45,469	13,229	1,313	12,226	1,130	7,980	86,206
June 1.....	4,095	38,568	13,009	970	11,299	1,331	9,032	78,304
June 8.....	4,620	44,697	11,674	1,163	11,649	1,118	9,271	84,192
June 15.....	4,946	42,982	13,095	1,273	11,102	1,004	9,748	84,150
June 22.....	4,763	42,761	12,556	421	10,976	898	9,391	81,766
June 29.....	5,039	42,931	13,051	1,744	10,842	....	9,312	82,919
July 6.....	3,387	34,396	10,059	1,277	8,815	....	6,862	64,796
July 13.....	4,618	39,891	12,559	1,796	10,494	1,258	9,112	79,728
July 20.....	4,882	34,178	10,693	1,912	10,720	1,374	10,414	74,173
July 27.....	4,107	33,358	11,865	1,909	7,495	1,526	9,121	69,381
Aug. 3.....	3,517	31,607	10,181	1,504	10,008	1,314	9,528	67,659
Aug. 10.....	2,979	18,206	8,207	2,044	9,887	1,370	9,562	52,255
Aug. 17.....	2,652	26,851	9,122	1,885	10,266	1,233	10,085	62,094
Aug. 24.....	2,503	26,934	8,574	2,021	9,983	1,365	9,550	60,930
Aug. 31.....	2,295	24,163	8,355	1,767	6,940	1,545	9,209	54,274
Sept. 7.....	1,586	19,019	5,805	1,217	5,428	1,576	8,956	43,587
Sept. 14.....	2,392	24,889	9,250	2,075	5,988	....	9,046	53,640
Sept. 21.....	3,188	23,686	9,039	1,541	7,064	....	9,219	53,737
Sept. 28.....	3,621	22,138	9,559	1,754	5,235	....	8,655	50,962
Oct. 5.....	3,545	27,072	8,505	1,380	3,277	....	9,137	52,916
Oct. 12.....	2,796	19,249	7,709	1,531	2,278	826	8,680	43,069
Oct. 19.....	2,716	19,699	7,766	742	4,102	679	6,701	42,405
Oct. 26.....	3,067	24,208	7,940	592	2,010	935	7,010	45,762
Nov. 2.....	3,216	26,692	6,846	1,105	1,217	1,645	7,629	48,350
Nov. 9.....	3,261	22,626	7,713	419	....	1,377	8,965	44,361
Nov. 16.....	2,813	21,305	7,023	....	....	1,015	7,462	39,618
Nov. 23.....	3,618	20,634	9,181	....	893	....	4,725	39,051
Nov. 30.....	3,571	16,417	7,139	....	3,303	....	2,951	33,381
Dec. 7.....	4,197	12,640	7,880	....	5,501	....	3,689	33,907
Dec. 14.....	2,100	12,757	6,627	1,488	5,625	....	2,257	30,854
Dec. 21.....	2,218	15,099	6,188	1,685	4,262	....	2,948	32,400
Dec. 28.....	3,499	11,273	3,413	1,181	....	....	2,456	21,822
Dec. 31.....	663	5,431	58	551	....	....	1,050	7,753
Total	194,982	1,483,320	477,075	73,703	414,889	42,332	399,782	3,086,083

DIAGRAM 6—REFINERS' WEEKLY MELTINGS.

(In Thousands of Long Tons)

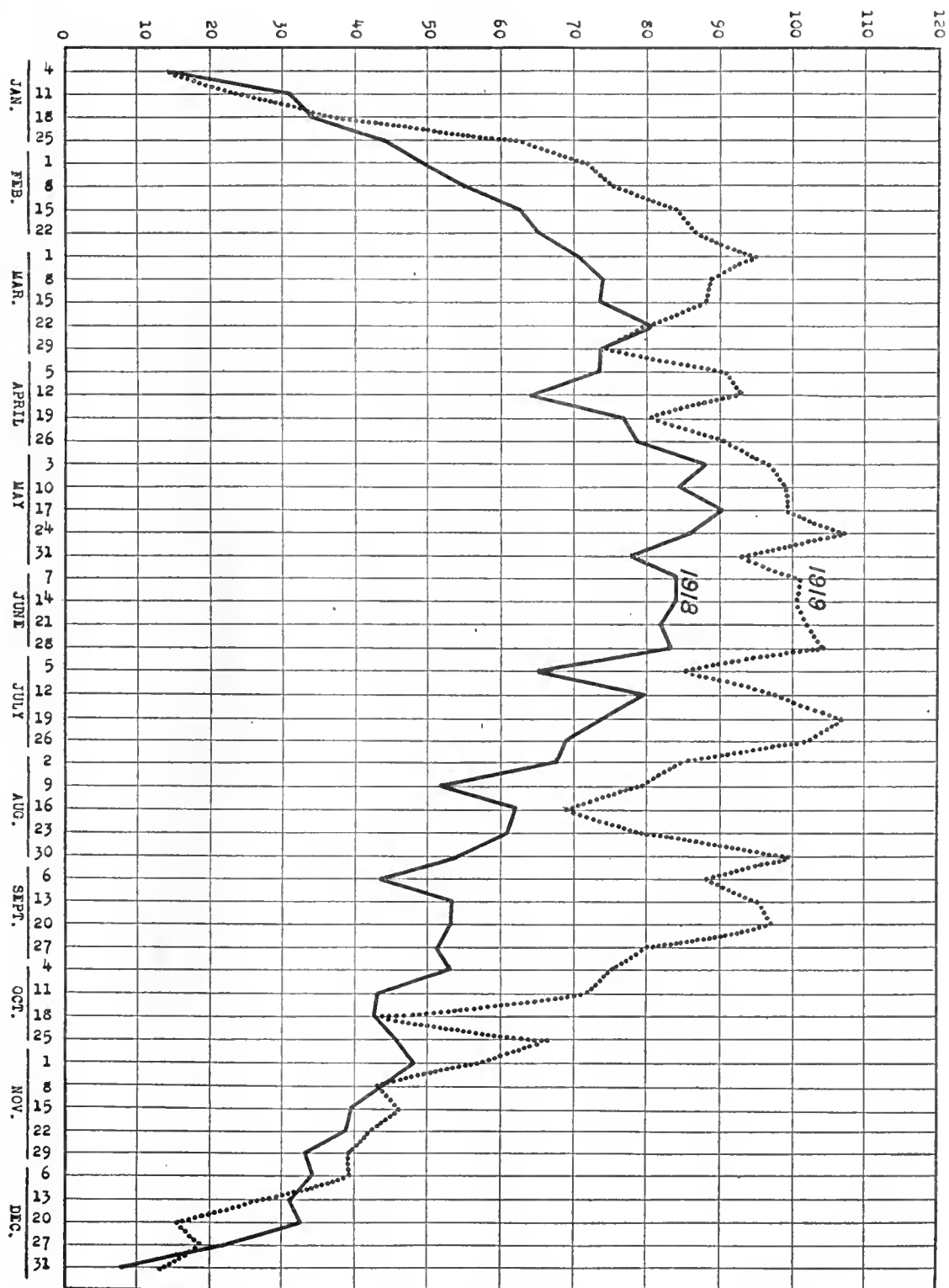


TABLE 50
Refiners' Weekly Meltings, 1919
Unit—Long Tons

Week Ending	Boston	New York	Phila- delphia	Savannah	New Orleans	Galveston	San Fran- cisco	Total
Jan. 1-4.....	1,139	8,970	310	720	1,339	....	1,475	13,953
Jan. 11.....	2,883	9,353	4,160	1,209	4,386	....	2,863	24,854
Jan. 18.....	....	24,849	6,193	1,155	....	....	3,958	36,155
Jan. 25.....	4,530	32,556	12,310	1,240	5,509	623	5,477	62,245
Feb. 1.....	4,757	35,581	11,567	1,527	10,680	1,723	6,090	71,925
Feb. 8.....	4,573	40,804	11,114	1,532	10,304	485	6,840	75,652
Feb. 15.....	5,690	39,141	14,852	1,854	11,118	1,356	10,179	84,190
Feb. 22.....	4,927	36,925	14,829	2,450	13,524	2,564	11,120	86,339
Mar. 1.....	5,669	44,944	15,600	2,351	14,140	1,515	10,884	95,103
Mar. 8.....	5,630	37,166	17,024	2,128	14,027	1,358	11,218	88,551
Mar. 15.....	6,392	36,617	18,424	2,122	13,362	1,443	9,657	88,017
Mar. 22.....	6,541	34,238	14,249	2,319	9,010	1,485	11,759	79,601
Mar. 29.....	5,920	32,595	10,747	2,329	10,523	1,529	10,278	73,921
Apr. 5.....	5,177	41,724	18,519	2,060	11,618	699	10,617	90,414
Apr. 12.....	6,567	43,705	16,443	2,417	13,934	....	10,026	93,092
Apr. 19.....	5,640	36,566	13,335	2,296	11,858	....	10,616	80,311
Apr. 26.....	6,094	43,949	14,388	2,252	12,427	722	10,622	90,454
May 3.....	7,028	45,046	17,873	2,185	11,382	1,920	11,257	96,691
May 10.....	7,152	45,131	17,907	2,591	12,888	1,553	11,741	98,963
May 17.....	7,203	47,361	16,917	2,533	11,633	1,595	11,767	99,009
May 24.....	6,967	48,630	21,137	2,743	14,052	1,557	12,503	107,589
May 31.....	6,068	42,598	17,127	2,708	12,147	1,531	10,600	92,779
June 7.....	6,273	45,832	18,504	2,598	13,626	1,689	12,591	101,113
June 14.....	6,660	46,489	19,705	2,687	11,863	1,563	11,357	100,324
June 21.....	6,476	47,560	19,003	2,663	14,144	1,020	11,818	102,684
June 28.....	7,373	48,284	21,180	2,682	11,641	1,484	11,432	104,076
July 5.....	7,394	38,835	15,284	1,568	11,925	1,559	8,531	85,096
July 12.....	7,571	46,494	15,633	2,691	11,963	1,469	12,142	97,963
July 19.....	5,543	48,372	20,641	2,554	14,019	1,491	13,733	106,353
July 26.....	6,821	48,721	16,524	2,602	13,086	1,508	13,087	102,349
Aug. 2.....	4,341	41,079	11,288	2,203	13,184	1,117	13,291	86,503
Aug. 9.....	4,496	34,997	9,384	2,597	12,921	1,504	13,803	79,702
Aug. 16.....	4,974	27,658	9,064	2,254	13,282	1,489	10,040	68,761
Aug. 23.....	4,127	36,133	11,685	3,047	12,392	1,464	10,410	79,258
Aug. 30.....	6,140	45,851	20,696	2,704	12,278	1,336	10,488	99,493
Sept. 6.....	5,825	39,938	15,811	2,213	12,894	1,362	10,013	88,056
Sept. 13.....	7,259	43,172	20,641	1,855	13,175	1,357	7,731	95,190
Sept. 20.....	7,428	49,667	19,020	2,762	8,994	1,381	8,127	97,379
Sept. 27.....	5,648	38,443	16,666	2,803	10,190	1,253	4,914	79,917
Oct. 4.....	5,428	35,208	15,922	2,623	9,158	1,388	5,499	75,226
Oct. 11.....	6,604	26,909	14,250	1,833	10,555	1,437	10,430	72,018
Oct. 18.....	5,083	18,391	9,884	....	5,746	1,678	2,799	43,581
Oct. 25.....	5,633	35,403	13,094	2,465	468	659	8,797	66,519
Nov. 1.....	6,173	34,163	14,471	....	....	....	1,686	56,493
Nov. 8.....	5,319	30,753	6,698	....	719	....	....	43,489
Nov. 15.....	2,425	30,437	7,306	....	6,221	....	....	46,389
Nov. 22.....	2,185	24,331	4,977	....	10,283	....	....	41,776
Nov. 29.....	4,252	19,303	6,004	....	9,799	....	....	39,358
Dec. 6.....	3,155	21,595	6,265	....	8,288	....	....	39,303
Dec. 13.....	3,846	4,745	6,897	....	7,399	....	4,347	27,234
Dec. 20.....	3,683	4,724	6,135	....	85	....	1,013	15,640
Dec. 27.....	1,296	15,209	827	....	....	1,497	....	18,829
Dec. 31.....	105	11,828	....	....	41	937	....	12,911
Total	276,083	1,848,973	698,484	94,125	510,200	55,300	419,626	3,902,791

For New York, of course, a much greater volume of production is exhibited, the highest point attained being 46,439 tons in the week ending May 18. For the whole year, the meltings were 1,483,320 tons, an average of 28,525 tons per week, about seven times the average at Boston. Philadelphia, though next to New York in volume of operations, reported a maximum of only 14,107 tons in the week of May 11, and had an average for the year of only 9,212 tons, about one-third of the New York average.

New Orleans followed close upon Philadelphia, with a maximum melt of 14,066 tons in the week ending February 23, this highest point being attained much earlier in the year than at the other refining centers. The average weekly melt for the 48 weeks when the refineries were in operation was 8,643 tons, as against 9,212 tons at Philadelphia. The other two southern ports, Galveston and Savannah, exhibit relatively small meltings, the maxima being but 1,645 tons and 2,416 tons, respectively. No meltings were reported for six weeks during the year at Savannah and none for seventeen weeks at Galveston. The only refining center on the Pacific Coast, San Francisco, reported a volume of production practically equivalent to that of New Orleans and not far behind that of Philadelphia. The "peak" production week was that of May 4, when 10,916 tons of raw sugar were melted, as compared with a weekly average of 7,688 tons against 8,643 tons for New Orleans and 9,212 tons for Philadelphia. Like the three Eastern ports, refineries at San Francisco were in operation every week throughout the year.

For all the refineries of the United States combined, the weekly average melt was 59,348 tons, as compared with the much greater capacity of 130,600 long tons. The largest weekly melt was 90,705 tons in the week ending May 18, which was thus 69 per cent. of the full capacity of the refineries. The average weekly production of refined sugar was thus equivalent to the country's consumption requirements for about $5\frac{1}{2}$ days. The weekly meltings were in direct relation to the country's seasonal requirements, the largest production coming during the spring and summer months when the demand was greatest.

Table 50 gives the weekly meltings for all ports in 1919. Generally, the situation described above for 1918 applied also to 1919, but there was a greater volume of production at all ports in 1919, reflecting the return of the country to unrestricted consumption and the large "toll" export business for the British Royal Commission on The Sugar Supply. Boston attained a record melt of 7,571 tons in the week ending July 12, as against 5,643 tons in 1918, and the weekly average for the year was 5,309 tons, as compared with 3,750 tons in 1918.

More striking was the increased volume of production for New York, where, in the week of September 20, 49,667 tons were refined, as compared with a maximum of 46,439 tons in 1918. The weekly average mounted from 28,525 tons in 1918 to 35,557 tons in 1919. Philadelphia increased in weekly average from 9,212 tons to 13,432 tons, and New Orleans from 8,643 tons to 9,811 tons. On the other hand, San Francisco, which had no share in the large toll export refining trade for the British Royal Commission, showed but a slight increase in volume. The maximum figures for all ports combined in 1919 was in the week of May 24, when the melt was 107,589 tons, as compared with but 90,705 tons in 1918. This was 82 per cent. of the full capacity of the refineries. The weekly average for all ports combined was 75,053 tons, which represented about seven days normal supply for the United States.

In tables 51 and 52 the refiners' melting at all ports are summarized by months for convenience in reference. The largest meltings in any one month in 1918 were at New York, in the month of May, when 217,979 tons were refined, but in 1919, 223,501 tons were refined at this port in July. For all ports combined the record melt in 1918 was the 427,874 tons in May, and in 1919, 478,264 tons in July. In 1918 there was some production of refined sugar every month in the year except for the month of December at the port of Galveston. In 1919, while the volume of production was greater every working month, there were no meltings at Savannah in November and December, nor any at Galveston and San Francisco in November, because old crop supplies were exhausted and there were no new crop arrivals until the latter part of December. (See Diagram 7.)

While all raw sugar is imported and melted at the various coast refineries, the refined sugars are shipped to all parts of the United States. A statistical record of these shipments from refineries, beet factories, and Louisiana cane mills is presented in the following chapter.

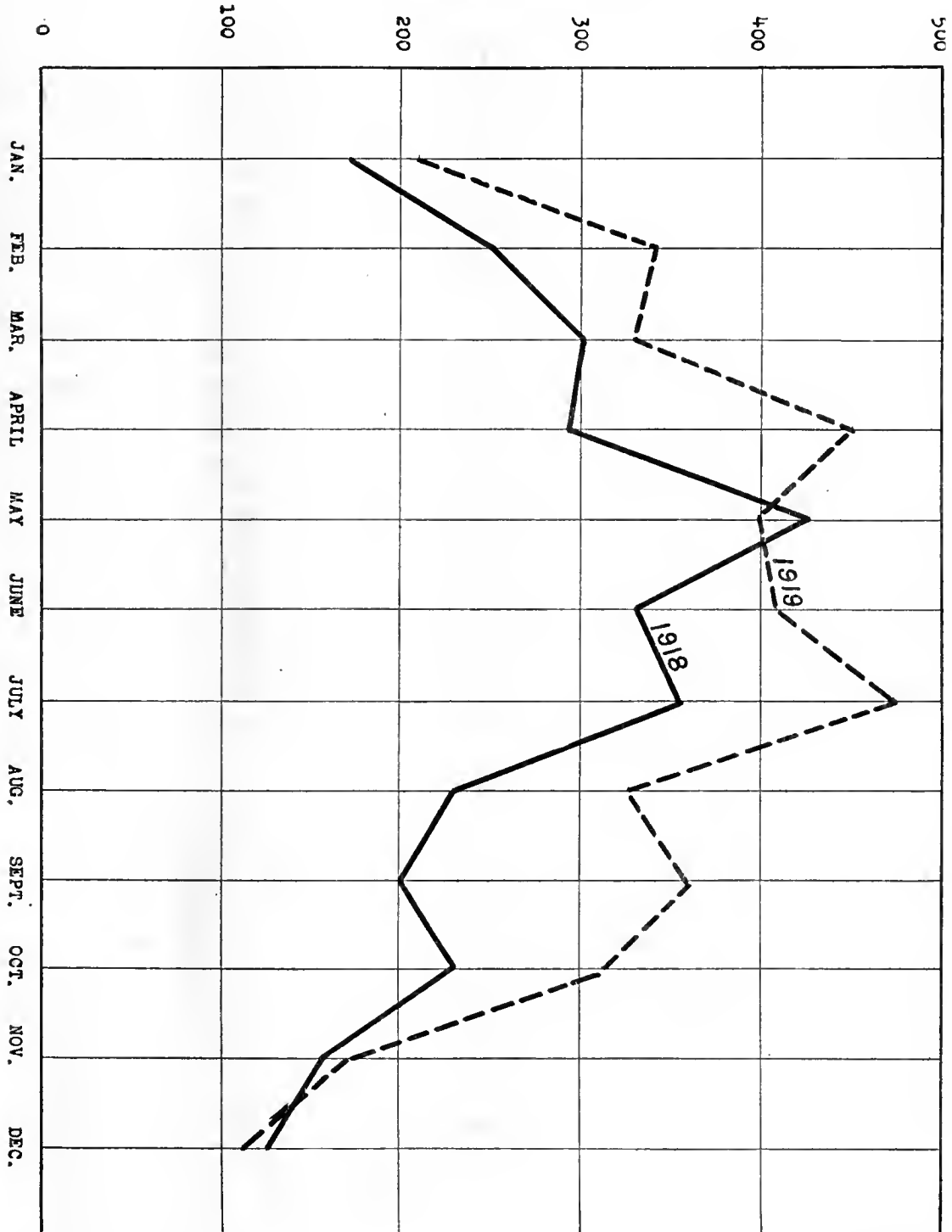
TABLE 51
Refiners' Monthly Meltings of Raw Cane Sugar—By Ports and Geographical Divisions, 1918
Unit—Long Tons

Month	Boston	New York	Philadelphia	Total Eastern	Savannah	New Orleans	Galveston	Total Southern	San Francisco	Total All Ports
January (5 weeks)	14,685	72,100	25,430	112,215	4,512	31,947	2,194	38,653	21,641	172,509
February	13,893	118,219	34,083	166,195	7,840	49,671	3,217	60,728	26,465	253,388
March	20,954	141,733	39,545	202,232	8,900	47,618	5,217	54,735	37,584	301,551
April	17,898	145,500	42,900	206,298	7,391	42,983	4,393	54,767	33,804	294,869
May (5 weeks)	25,177	217,979	67,485	310,641	7,083	57,310	5,253	69,646	47,587	427,874
June	19,368	173,371	50,376	243,115	4,601	44,569	3,020	52,190	37,722	333,027
July (5 weeks)	20,511	173,430	55,357	249,298	8,398	47,532	5,472	61,402	45,037	355,737
August	10,429	96,154	34,258	140,841	7,717	37,076	1,573	50,306	38,406	229,553
September	10,787	89,732	33,653	134,172	6,587	23,715	1,576	31,878	35,876	201,926
October (5 weeks)	15,340	116,920	38,766	171,026	5,350	12,884	4,085	22,319	39,157	232,502
November	13,263	80,982	31,056	125,301	419	4,196	2,392	7,007	24,103	156,411
December	12,677	57,200	24,166	94,043	4,905	15,388	....	20,293	12,400	126,736
Total, 1918	194,982	1,483,320	477,075	2,155,377	73,703	414,889	42,332	530,924	399,782	3,086,083

TABLE 52
Refiners' Monthly Meltings of Raw Cane Sugar—By Ports and Geographical Divisions, 1919

Month	Boston	New York	Philadelphia	Total Eastern	Savannah	New Orleans	Galveston	Total Southern	San Francisco	Total All Ports
January	13,309	111,309	34,540	159,158	5,851	21,914	2,346	30,111	19,863	209,132
February	20,859	161,814	56,395	239,068	8,187	49,086	5,920	63,193	39,023	341,284
March	24,483	140,616	60,444	225,543	8,898	46,922	5,815	61,635	42,912	330,090
April (5 weeks)	30,506	210,990	80,558	322,054	11,210	61,219	3,341	75,770	53,138	450,962
May	27,390	183,720	73,088	284,198	10,575	50,720	6,236	67,531	46,611	398,340
June	26,782	188,165	78,392	293,339	10,630	51,274	5,756	67,660	47,198	408,197
July (5 weeks)	31,670	223,501	79,370	334,541	11,618	64,177	7,144	82,939	60,784	478,264
August	19,737	144,639	50,829	215,205	10,602	50,873	5,793	67,268	44,741	327,214
September	26,160	171,220	72,138	269,518	9,633	45,253	5,353	60,239	30,785	360,542
October (5 weeks)	28,921	150,074	67,621	246,616	6,921	25,927	5,162	38,010	29,211	313,837
November	14,181	104,824	24,985	143,990	....	27,022	....	27,022	....	171,012
December (5 weeks)	12,085	58,101	20,124	90,310	....	15,813	2,434	18,247	5,360	113,917
Total, 1919	276,083	1,848,973	698,484	2,823,540	94,125	510,200	55,300	659,625	419,626	3,902,791

DIAGRAM 7—REFINERS' MONTHLY MELTINGS OF RAW CANE SUGAR.
(IN THOUSANDS OF LONG TONS)



CHAPTER IV.

DISTRIBUTION FROM REFINERIES, BEET SUGAR MILLS, LOUISIANA PLANTATIONS, AND MISCELLANEOUS SOURCES*

In previous chapters, figures have been presented showing the weekly and monthly receipts of raw sugars by refineries from all sources, both foreign and domestic, also the amounts converted (melted) from the raw to the refined state. The pressure of war-time conditions brought forth, in addition to the above, hardly less unique and useful statistics of the distribution of the refined product, both from cane-sugar refineries and beet-sugar factories. For with the continued scarcity of refined sugar both in the entire world generally and in the United States specifically throughout the war accurate statistical information in relation to distribution was absolutely imperative as a basis for any restrictive regulations that were to be imposed upon the various sugar-using industries and the housewife.

In September, 1917, the Beet Sugar Distributing Committee of the United States Food Administration was created to supervise the distribution of beet sugar of the 1917-18 crop, in accordance with the provisions of the contract entered into at that time by the Food Administrator and the beet-sugar producers. This committee functioned continuously from September, 1917, to September, 1919, during which period both the 1917-18 and the 1918-19 crops were distributed from the factories. A record was kept of the geographical distribution of the sugar shipped, and monthly statements were issued which showed the amount of beet sugar shipped from the various producing regions to every State of the Union. Similar monthly data were made available for the cane sugar refineries through the records obtained by the International Sugar Committee, the American Refiners' Committee, and the United States Sugar Equalization Board.

Thus by the combination of the beet and cane statistics it has been possible to determine accurately for the first time the amount of the refiners' cane sugars and all beet sugars distributed monthly from each section of the United States which either produces or refines sugar in the United States.

Figures of Distribution by Months

Table 53 shows by months the beet sugar shipments of the United States from each producing region for both the 1917-18 and the 1918-19 crops. Although the two crops differed in magnitude only by 1,351 tons, or 1/10 of one per cent., the various producing regions exhibit great variations in the amounts shipped in the two crops: California, for example, shipped 213,635 tons in the 1917-18 crop, but in the 1918-19 crop shipped only 122,820 tons, a decline of 90,815 tons. On the other hand, the Michigan-Ohio-Indiana group increased its shipments from 86,812 tons in the 1917-18 crop to 163,628 tons in the following crop, an increase of 76,816, thus practically counteracting the decrease in California. The Washington-Idaho group increased about 24,000 tons and the Iowa-Menominee group increased about 18,000 tons. On the other hand the Montana-Kansas group showed a decline of 27,000 tons. An interesting feature to be noted is the distribution of the crop in relation to time. Thus in the 1917-18 crop, California shipped nearly one-fourth of its total, 57,023 tons, before October 1, whereas the other producing regions did not ship large quantities till a month or two later. The largest amount distributed in any one month from any producing region in the two crops was the amount shipped in November, 1917, from the Montana-Kansas region, 58,152 tons.

* Figures of distribution are given in pounds or short tons instead of long tons as in the raw sugar figures.

TABLE 53
Beet Sugar Distributed From Each Producing Region
(In Short Tons)
1917-18 Crop

	California	Oregon Washington Nevada Utah Idaho	Michigan Ohio Indiana	Montana Wyoming Colorado Nebraska Kansas	Iowa Minnesota Wisconsin Illinois Menominee	Total
Distributed 1917, before October.....	57,023	.....	371	393	1	57,788
October	36,627	3,562	4,380	26,195	4,534	75,298
November	22,070	20,982	35,053	58,152	8,430	144,687
December	17,603	27,504	24,045	44,586	4,503	118,241
January—1918	10,447	12,666	14,836	33,856	1,251	73,056
February	19,120	15,393	7,482	17,423	434	59,852
March	8,534	12,701	622	31,451	30	53,338
April	14,422	17,299	23	16,568	....	48,312
May	10,769	8,734	....	18,818	....	38,321
June	9,928	3,540	....	27,992	....	41,460
July	3,287	3,919	....	9,920	39	17,165
August	1,370	2,209	....	7,412	....	10,991
September	428	1,415	....	10,192	....	12,035
October .....	....	1,042	....	4,931	....	5,973
November .....	....	267	....	277	....	544
December .....	....	....	....	90	....	90
January—1919	353	1,410	....	84	44	1,891
Total	*213,635	132,643	86,812	308,340	19,266	*760,696

1918-19 Crop

	California	Oregon Washington Nevada Utah Idaho	Michigan Ohio Indiana	Montana Wyoming Colorado Nebraska Kansas	Iowa Minnesota Wisconsin Illinois Menominee	Total
Distributed to July 31, 1918	450	....	....	....	....	450
August	214	....	....	....	....	214
September	14,505	....	....	....	....	14,505
October	11,788	1,362	8,244	5,925	2,524	29,843
November	8,644	7,466	35,254	16,152	10,933	78,449
December	10,549	13,904	33,307	27,242	12,005	97,007
January—1919	11,241	16,218	29,177	31,898	7,731	96,265
February	8,761	15,940	15,617	24,622	1,787	66,727
March	6,767	15,645	14,943	33,172	2,072	72,599
April	7,025	17,090	11,793	33,498	....	69,406
May	9,179	21,364	12,396	31,588	....	74,527
June	12,129	20,305	2,280	41,718	2	76,434
July	18,616	18,456	610	25,007	....	62,689
August	2,952	6,843	7	7,947	....	17,749
September .....	....	2,604	....	2,579	....	5,183
Total	122,820	157,197	163,628	281,348	37,054	762,047

* Includes 1,654 tons from California not given by months.

Table 54 shows the monthly beet distribution from the various producing regions for the calendar year 1918, thus combining the overlapping crops in the period July to December, 1918, when both old and new crop sugars were being distributed simultaneously. It will be noted that the Michigan-Ohio-Indiana region did not distribute any sugar from May through September, inclusive, and the Iowa-Menominee section did not distribute any sugar from April to October, with the exception of 39 tons in July. All the other producing regions made deliveries throughout the year. The month of "peak load" was December, with November and January following closely. The months of February to August, inclusive, show a rather constant decline, but by September new crop sugars moved in sufficient quantity to arrest the decline.

Table 55 shows the geographical sources of the cane sugar shipments by states, for each month from November 1, 1917, to November 1, 1918. These figures were compiled from reports of the refiners to the statistical department of the International Sugar Committee. Refined cane sugars were shipped from each of the refining ports every month, except that there were no shipments from Galveston in November and December, 1917, and none from Savannah for November and December, 1917, and for January, 1918. The largest shipments generally were in the month of May, while the smallest shipments were in December. New York, of course, was by far the most important shipping point, a total of 1,324,075 short tons being delivered therefrom, or almost one-half out of a total for the whole country of 2,902,943 tons. Next to New York came Philadelphia, with shipments of 473,321 tons, and then San Francisco, with 406,827 tons. New Orleans followed hard upon San Francisco, with 395,044 tons. Shipments from Boston were 193,290 tons, or not quite one-half the tonnage at New Orleans. In comparison with the large business of each of the above ports the shipments from Galveston and Savannah were not significant, being only 38,895 tons and 56,383 tons, respectively. (See Diagram 8.)

Table 56 shows the combined monthly distribution from the various sources of supply, beet, cane and Louisiana sugars, for the period November 1, 1917, to November 1, 1918. From the East there were shipped to various parts of the country 1,990,686 tons of sugar, which was just about twice the distribution of 982,862 tons from the Western part of the country. The South was 300,000 tons behind the West, while the Central regions came last, with only 107,516 tons. From the East, West and South shipments were made each month during the year, but from the Central regions there were no shipments from April to October, except in negligible amounts. The heaviest deliveries of cane and of beet and cane combined were in the month of May, when 446,613 tons were distributed, but the heaviest deliveries of beet were in November. The State of California, which was about 70,000 tons behind Pennsylvania in the cane sugar shipments, had a combined beet and cane distribution of about 550,000 tons, thus exceeding all states but New York and Louisiana.

TABLE
Beet Sugar Distributed From Each Producing Region—Both

Producing Region	January	February	March	April	May
California	10,447	19,120	8,534	14,422	10,769
Oregon, Washington, Nevada, Utah, Idaho	12,666	15,393	12,701	17,299	8,734
Michigan, Ohio, Indiana.....	14,836	7,482	622	23	....
Montana, Wyoming, Colorado, Nebraska, Kansas	33,856	17,423	31,451	16,568	18,818
Iowa, Minnesota, Wisconsin, Illinois, Menominee	1,251	434	30	....	....
Total	73,056	59,852	53,338	48,312	38,321

TABLE
Shipments of Refined Cane Sugar from

Locality of Shipment	1917, November	1917, December	1918, January	1918, February	1918 March
Boston	7,749	8,076	15,752	13,675	21,651
New York	37,723	31,760	52,866	115,679	155,813
Philadelphia	19,966	14,703	22,064	36,543	49,840
Total, Eastern Ports.....	65,438	54,539	90,682	165,897	227,304
Savannah .....	....	....	....	7,027	10,238
New Orleans	12,076	18,423	26,006	44,156	50,588
Galveston .....	....	....	1,967	3,330	3,880
Total, Southern Ports.....	12,076	18,423	27,973	54,513	64,706
San Francisco	24,686	15,618	24,752	25,162	42,703
Honolulu	72	....	1,754	2,013	1,916
Total, Western Ports.....	24,758	15,618	26,506	27,175	44,619
Total, All Ports.....	102,272	88,580	145,161	247,585	336,629

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Crops Combined (in Short Tons), for Calendar Year 1918

June	July	August	September	October	November	December	Total
9,928	3,737	1,584	14,933	11,788	8,644	10,549	124,455
3,540	3,919	2,209	1,415	2,404	7,733	13,904	101,917
....	....	....	....	8,244	35,254	33,307	99,768
27,992	9,920	7,412	10,192	10,856	16,430	27,332	228,250
....	39	2,524	10,933	12,005	27,216
41,460	17,615	11,205	26,540	35,816	78,994	97,097	581,606

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Each Locality by Months (Short Tons)

1918, April	1918, May	1918, June	1918, July	1918, August	1918, September	1918, October	Total
19,537	26,322	19,305	18,887	12,950	12,889	16,497	193,290
150,848	203,161	181,895	130,953	92,247	81,299	89,831	1,324,075
49,897	69,716	56,001	54,215	31,564	37,003	31,809	473,321
220,282	299,199	257,201	204,055	136,761	131,191	138,137	1,990,686
6,177	5,251	5,021	7,358	4,914	5,730	4,667	56,383
35,302	50,372	45,267	42,900	29,071	24,881	16,002	395,044
5,974	4,526	3,606	4,911	5,227	2,536	2,938	38,895
47,453	60,149	53,894	55,169	39,212	33,147	23,607	490,322
45,858	44,306	47,331	29,577	43,067	36,324	27,443	406,827
1,945	2,638	1,898	525	909	487	951	15,108
47,803	46,944	49,229	30,102	43,976	36,811	28,394	421,935
315,538	406,292	360,324	289,326	219,949	201,149	190,138	2,902,943

TABLE

Summary of Distribution of Sugar From All Producing

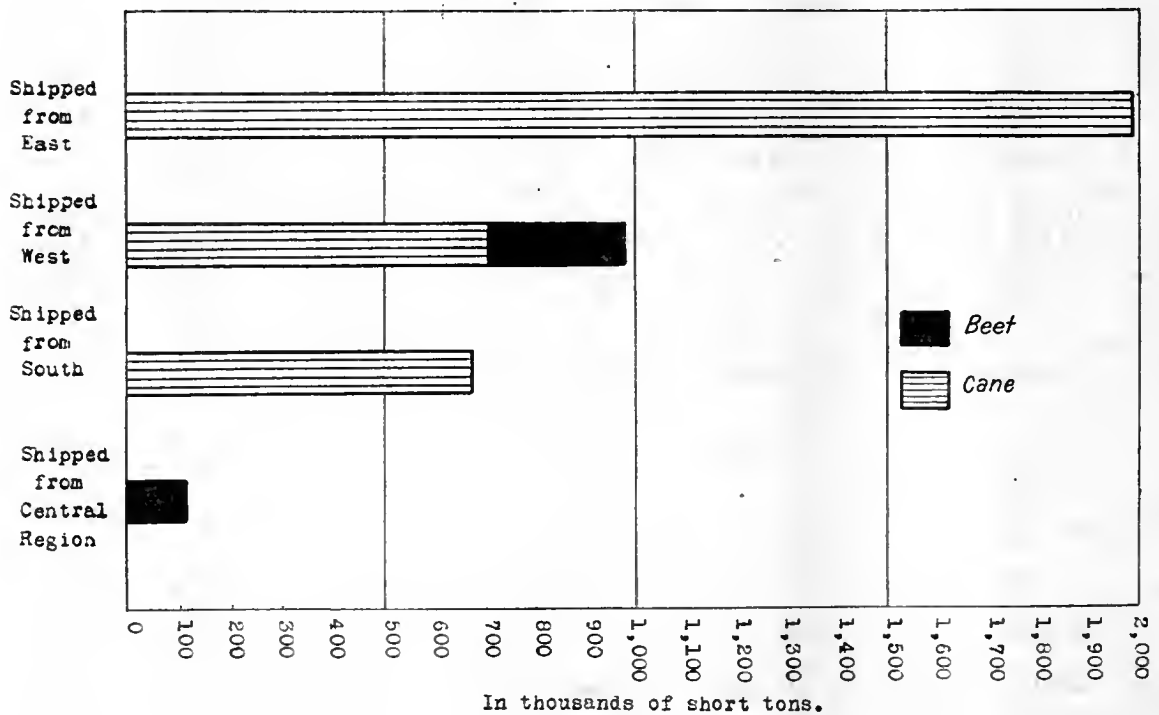
Locality of Shipment	1917, November	1917, December	1918, January	1918, February	1918 March
Boston (Cane Sugar).....	7,749	8,076	15,752	13,675	21,651
New York (Cane Sugar).....	37,723	31,760	52,866	115,679	155,813
Philadelphia (Cane Sugar).....	19,966	14,703	22,064	36,543	49,840
Total Shipped from East.....	65,438	54,539	90,682	165,897	227,304
Savannah (Cane Sugar) .....	.....	.....	.....	7,027	10,238
New Orleans (Cane Sugar).....	12,076	18,423	26,006	44,156	50,588
Galveston (Cane Sugar) .....	.....	.....	1,967	3,330	3,880
Louisiana Plantations† (Cane Sugar)	*60,000	*120,000	*2,000	*1,500	*800
Total Shipped from South..	72,076	138,423	29,973	56,013	65,506
California (Beet Sugar).....	22,070	17,603	10,447	19,120	8,534
San Francisco (Cane Sugar)	24,686	15,618	24,752	25,162	42,703
Oregon-Idaho (Beet Sugar).....	20,982	27,504	12,666	15,393	12,701
Montana-Kansas Region (Beet Sugar)	58,152	44,586	33,856	17,423	31,451
Honolulu (Cane Sugar).....	72	....	1,754	2,013	1,916
Total Shipped from West....	125,962	105,311	83,475	79,111	97,305
Iowa-Menominee Region (Beet Sugar)	8,430	4,503	1,251	434	30
Michigan-Ohio-Indiana Region (Beet Sugar)	35,053	24,045	14,836	7,482	622
Total Shipped from Central Region	43,483	28,548	16,087	7,916	652
Total, All Regions.....	306,959	326,821	220,217	308,937	390,767
Total Beet	144,687	118,241	73,056	59,852	53,338
Total Cane from Refineries..	102,272	88,580	145,161	247,585	336,629
Total Louisiana Cane (Direct Consumption) Sugars.....	*60,000	*120,000	*2,000	*1,500	*800

*Estimated.

†Direct Consumption Sugars.

[illegible]

DIAGRAM 8—DISTRIBUTION OF SUGAR FROM THE PRODUCING OR REFINING CENTERS OF THE UNITED STATES FROM NOVEMBER 1, 1917, TO OCTOBER 31, 1918.



Quarterly and Annual Statistics of Distribution From October 1, 1917, to December 31, 1919

Both the International Sugar Committee and the United States Sugar Equalization Board issued, through their statistical departments, statistics of distribution for quarterly periods. The following tables give these figures for the quarterly periods as originally issued, and also present the results of combinations of these quarters into yearly periods. These figures were issued in long tons:

TABLE 57

Summary of Quarterly Reports

(a) From Reports of International Sugar Committee, 1918

Unit—Long Tons

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
From Refineries	651,435	998,729	689,543	514,100	2,853,807
From Beet Factories.....	171,650	117,488	45,292	189,200	523,630
From Louisiana Plantations.....	5,335	....	5,000	103,000	113,335
Raw and Washed to Direct Con- sumption	15,907	10,691	3,032	3,700	33,330
Hawaiian Refined	9,204	5,726	1,527	3,700	20,157
	853,531	1,132,634	744,394	813,700	3,544,259
Less Refined Exports.....	9,204	24,486	35,942	80,500	150,132
Total to Consumption—Long Tons..	844,327	1,108,148	708,452	733,200	3,394,127
Pounds per capita (105,000,000 pop.)	18	24	15	16	73

(b) From Reports of United States Sugar Equalization Board, 1919

Unit—Long Tons

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
From Refineries	710,540	1,265,577	1,105,342	558,722	3,640,181
From Beet Factories.....	211,437	197,306	*138,000	324,000	870,743
Louisiana Sugar	85,000	6,000	....	100,000	191,000
Raw and Washed to Direct Con- sumption	6,788	4,000	18,266	18,859	47,913
Hawaiian Refined	3,805	5,625	....	1,246	10,676
	1,017,570	1,478,508	1,261,608	1,002,827	4,760,513
Less Refined Exports.....	99,804	255,429	148,861	155,000	659,094
Total to Consumption.....	917,766	1,223,079	1,112,747	847,827	4,101,419
Pounds per capita (105,000,000 pop.)	20	26	24	18	88

The heaviest deliveries of refiners' cane in both years were in the second quarter, while the beet sugar deliveries were greatest in the fourth quarter. The shipments from Louisiana plantations also reached the highest point in the fourth quarter for both years, but in the first quarter of 1919 there were larger shipments than in the corresponding period of 1918. This was due to the fact that the short Louisiana crop of 1917-18 was nearly all consumed in the last quarter of 1917, during the height of the severe shortage of that year, leaving hardly any supplies for the following year. The raw and washed sugars direct to consumption and the imports of Hawaiian refined

*Estimated.

were relatively small items. The contrast is striking between the year 1918, when consumption and exports were restricted rigidly by government intervention, and the year 1919, when there was no government restrictions except for brief intervals. The consumption of sugar in 1919 reached the enormous total of 4,099,376 long tons, against 3,394,127 tons in 1918, an increase of over 700,000 tons, yet the country could have unquestionably absorbed more, had supplies been available. In spite of this tremendous consumption the exports of 659,094 tons (including 490,389 tons of sugar refined on toll for the Royal Commission) were over four times the 1918 shipments of 150,132 tons

For calendar years prior to 1917, no distribution figures were obtained by the Food Administration or the Sugar Equalization Board, but for comparison data are available from Willett & Gray's Weekly Statistical Trade Journal, although no allowance was there made for the loss of conversion from raw cane to refined, refined beet sugar being combined with raw cane. In the following table proper correction has been made for this factor, and the annual distribution of sugar for the years 1910 through 1919 is shown, all figures being on a refined basis and therefore comparable. The figures for the years 1917, 1918 and 1919 are from the records of the International Sugar Committee and the United States Sugar Equalization Board, while the figures of the year 1910 through 1916 are based on Willett & Gray's annual statistics:

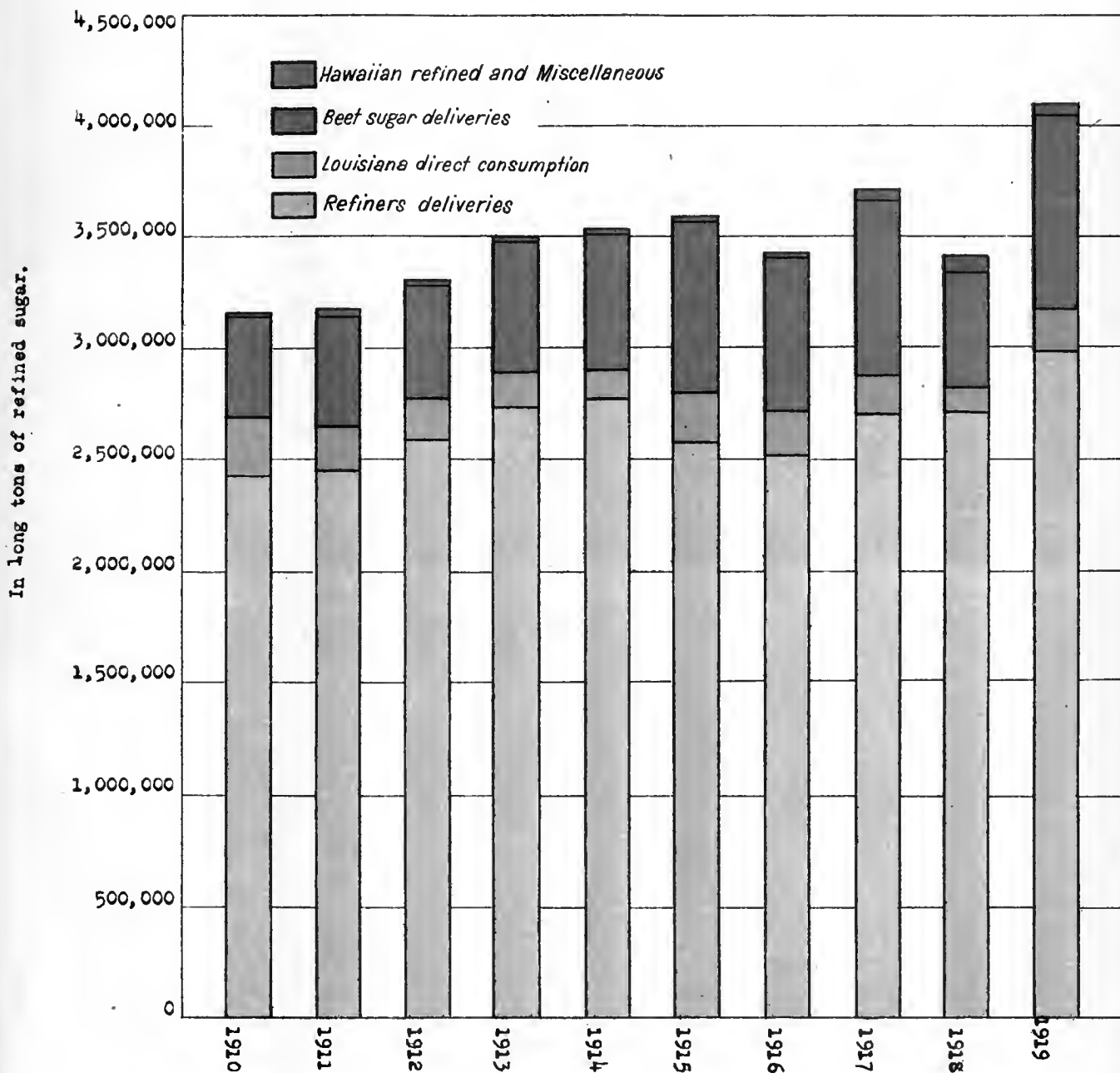
TABLE 58
Annual Consumption of Sugar in the United States, 1910-19
Unit—Long Tons—Refined Basis

	Refiners' Deliveries to U. S. Points	Louisiana Direct Consumption	Distribution of U. S. Beet	Hawaiian Refined	Miscellaneous	Total
1910.....	2,428,000	261,000	457,000	13,647	845	3,160,492
1911.....	2,450,000	194,000	507,000	13,503	1,803	3,166,306
1912.....	2,589,000	183,000	517,000	12,616	1,635	3,303,251
1913.....	2,732,000	158,000	625,000	13,496	831	3,529,327
1914.....	2,763,000	131,000	624,000	12,640	2,020	3,532,660
1915.....	2,574,000	219,000	762,000	10,899	6,224	3,579,123
1916.....	2,508,000	199,000	700,000	14,744	3,781	3,425,525
1917.....	2,691,955	183,661	785,079	13,382	20,618	3,694,695
1918.....	2,703,675	113,335	523,630	20,157	33,330	3,394,127
1919.....	2,981,087	191,000	870,743	10,676	47,913	4,101,419

The distribution figures from refineries and beet sugar mills show a large though not continuous increase from 1910 through 1919, but for the Louisiana direct consumption sugars a decline is exhibited. It will be noted that the 1919 consumption was about 400,000 tons above the previous record year, 1917, and about 500,000 tons above prewar average, while the 1918 consumption, restricted by the Food Administration and the Sugar Board, was about 300,000 tons below the 1917 consumption and about 200,000 below the prewar average. (See Diagram 9.)

DIAGRAM 9.

Annual Consumption of Various
Grades of Sugar in the United States 1910-
1919.



CHAPTER V

DESTINATION OF SUGAR SHIPPED FROM REFINERIES AND BEET SUGAR MILLS

In the previous chapter, statistics were given showing the amounts of sugar distributed from each point of shipment in the United States—from the various refining centers, from the beet-sugar producing regions, and Louisiana. Proceeding one step further in the statistical control of the industry, the various agencies of the government which gathered these sugar statistics determined also the points of destination, thus obtaining a record of the amounts shipped to each state from the producing and refining centers.

The Chicago Beet Sugar Distributing Committee, during the entire period of its existence, issued monthly statements showing the geographical destination of all sugar shipped from every beet-sugar producing region of the country, while for the cane sugar refineries, corresponding statistics were prepared by the statistical department of the American Refiners' Committee, but only for the twelve months' period November, 1917, through October, 1918. Unfortunately, no such statistics of destination of shipments could be obtained for the sugars shipped direct to the trade from the numerous small Louisiana sugar mills, which, however, supply only about 6 per cent. of the annual sugar consumption of the United States.*

Distribution of Sugar Shipped From Beet-Sugar Factories

Table 59 shows the monthly distribution of the 1917-18 beet-sugar crop to all states of the Union. Owing to the government restrictions on sugar consumption in effect during this period the distribution of this crop was spread over the abnormally long period of nineteen months. Illinois received the largest amount of any state, a total of 158,980 short tons out of the crop of 760,696 tons. Missouri and Minnesota came next with 59,283 tons and 57,267 tons, respectively. The smallest amounts were distributed to the New England states, Maine receiving but 42 tons. All told, thirty-seven states and the Indian Agency received some portions of this beet-sugar crop. From the beginning of the crop through January, 1918, nearly all of the thirty-seven states received sugars each month, but beginning with February, 1918, the number of states decreased until by July shipments were made to only fifteen states and by November, in small quantities, to only nine states. The largest amount shipped to any state in any single month was the delivery of 27,606 tons in November to Illinois.

Table 60 gives similar figures for the 1918-19 crop, which, with the removal of the Food Administration restrictions, was distributed in 15 months, as against 19 months for the previous crop. As in the 1917-18 crop, Illinois was the largest consumer, but receiving only 134,213 tons out of the total of 762,047 tons, as against 158,980 tons out of the previous crop which was practically as large. Second place was held by California, with receipts of 60,308 tons, as against only 49,934 tons the previous year. Each of the states of Michigan, Minnesota, Missouri and Ohio received about the same quantities, about 55,000 tons, which figure represents a considerable increase for Ohio and Michigan over the previous year. The distribution covered 33 states, as against 37 states in the previous crop, because there were no shipments to the New England states. An interesting though minor feature was the shipment of 6 tons to Alaska.

*The amount of this Louisiana direct consumption is thus relatively small as compared with the total annual consumption, but the distribution thereof is confined to three months, November, December and January, when refiners' cane distribution is at its lowest point. Accordingly, the figures of beet and refiners' cane distribution combined, for the other nine months, represent almost a complete record even with the omission of the Louisiana sugars, while, on the other hand, the record for the other three months is proportionately incomplete.

TABLE
Beet Sugar Distribution, 1917-

To State of	Distributed Before October 1	October	November	1917 December	1918 January	February	March	April
Arizona	1,555	261	493	958	181	240	100	255
Arkansas	1,016	3,199	2,530	3,666	1,785	114	....	....
California	9,066	3,901	4,996	3,499	2,351	1,684	1,598	3,398
Colorado	3,195	3,568	1,765	2,669	1,615	1,415	1,600	1,636
Idaho .....	....	460	362	196	130	615	293	418
Illinois	11,847	16,721	27,606	21,808	13,896	24,781	10,635	20,683
Indiana	206	1,272	6,342	7,795	2,427	28	3	....
Iowa	3,114	3,348	7,176	6,785	3,517	3,736	6,135	4,195
Kansas	1,762	2,919	4,018	2,900	1,665	2,004	2,455	463
Kentucky	185	243	1,531	3,655	1,625	41	....	....
Maine .....	....	....	9	33	....	....	....	....
Maryland .....	....	....	....	212	....	....	....	....
Massachusetts	230	....	581	66	....	....	....	....
Michigan	6,832	2,328	12,032	7,941	1,428	5,219	913	815
Minnesota .....	....	6,489	9,201	5,330	8,034	3,588	9,368	3,547
Missouri	6,600	7,171	12,816	7,978	7,964	4,231	4,163	2,463
Montana	684	1,531	1,297	625	55	313	377	471
Nebraska	1,809	2,426	4,000	2,264	2,778	1,028	4,078	1,410
Nevada	19	35	75	66	45	16	13	....
New Mexico	2,043	505	402	737	30	168	124	464
New York	55	....	7,253	3,461	344	....	....	1
North Dakota	118	1,223	1,056	632	840	566	1,030	543
Ohio	403	2,575	13,272	7,824	6,637	2,500	196	9
Oklahoma	1,810	2,567	4,517	3,738	1,550	2,942	1,709	474
Oregon	730	223	551	163	48	40	....	90
Pennsylvania	50	120	5,291	3,522	1,305	39	....	....
Rhode Island .....	....	....	33	54	....	....	....	....
South Dakota	216	1,402	1,204	1,010	758	48	1,189	405
Texas	1,805	5,013	6,176	8,651	5,191	1,499	....	469
Utah .....	....	1,904	1,656	1,147	389	522	622	899
Vermont .....	....	....	48	....	....	....	....	....
Virginia	50	....	....	418	30	....	....	....
Washington	741	1,108	946	1,127	440	385	520	890
West Virginia .....	....	....	....	1,142	32	....	....	....
Wisconsin	1,488	2,554	4,859	5,928	5,744	1,900	5,954	4,083
Wyoming	159	232	593	241	222	190	263	231
Tennessee .....	....	....	....	....	....	....	....	....
Indian Agency .....	....	....	....	....	....	....	....	....
Totals.....	57,788	75,298	144,687	118,241	73,056	59,852	53,338	48,312

It will be noted from the above figures that there were certain months when the two crops overlapped. In table 61 the two crops have been combined for the months of July to December, the period when the overlapping occurred, and the figures for the first half of the year are here reprinted in order to make a complete table of beet sugar distribution by states for one calendar year. It will be noted that for the calendar year, as for the crop year, Illinois received

59.

18 Crop (In Short Tons)

May	June	July	August	September	October	November	1918 December	1919 January	Total, Entire Crop
340	695	....	63	30	....	....	....	....	5,171
....	....	....	....	....	....	....	....	....	12,310
6,147	7,046	4,598	1,225	365	....	....	....	60	49,934
1,974	2,699	....	1,838	2,242	924	91	13	....	27,244
600	750	584	521	286	361	109	....	408	6,093
8,292	1,639	....	509	....	247	87	....	229	158,980
187	....	....	....	....	....	....	....	94	18,354
2,579	4,350	1,051	215	629	....	....	....	....	46,830
1,315	4,083	2,908	577	150	350	....	....	97	27,666
....	....	....	....	....	....	....	....	....	7,280
....	....	....	....	....	....	....	....	....	42
....	....	....	....	....	....	....	....	....	212
....	....	....	....	....	....	....	....	....	877
178	....	....	....	....	....	....	....	....	37,686
1,834	5,786	....	731	2,738	176	17	77	351	57,267
2,468	1,959	....	289	343	398	150	....	290	59,283
736	844	648	1,145	1,165	604	43	....	....	10,538
2,232	4,022	2,411	993	1,495	122	....	....	....	31,068
38	9	35	5	....	....	....	....	....	356
341	738	100	30	63	....	....	....	....	5,745
....	....	....	....	....	....	....	....	....	11,114
517	1,132	504	1,242	844	356	....	....	80	10,683
....	....	....	....	....	....	....	....	....	33,416
450	78	....	....	....	153	33	....	2	20,023
527	375	195	....	15	....	....	....	....	2,957
....	....	10	....	....	....	....	....	....	10,337
....	....	....	....	....	....	....	....	....	87
696	799	833	277	686	46	....	....	....	9,569
1,233	676	....	33	....	....	....	....	....	30,746
1,333	1,756	2,984	1,035	410	297	13	....	....	14,967
....	....	....	....	....	....	....	....	....	48
....	....	....	....	....	....	....	....	....	498
1,128	1,543	10	....	....	....	....	....	217	9,055
....	....	....	....	....	....	....	....	....	1,174
3,001	134	....	1	177	1,698	....	....	53	37,574
175	347	294	262	397	241	1	....	10	3,858
....	....	....	....	....	....	....	....	....	1,319
....	....	....	....	....	....	....	....	....	335
38,321	41,460	17,165	10,991	12,035	5,973	544	90	1,891	760,696

the largest beet sugar supplies, 130,450 tons, or nearly three times the 45,340 tons obtained by the state of Minnesota, which was next in rank. Thirty-two states of the Union received some portion of the beet sugar supplies available in the calendar year, but for many of these states practically negligible quantities are shown.

TABLE
Beet Sugar Distribution, 1918-

To State of	Distributed Before July 31	August	September	October	November	1918 December	1919 January
Arizona	65	30	234	903	670
Arkansas	425	841	971	989
California	450	213	579	2,164	2,747	4,521	8,137
Colorado	1,212	1,496	1,838	2,307
Idaho	174	320	554	1,023
Illinois	9,200	6,892	12,530	21,059	11,537
Indiana	941	4,253	4,714	5,522
Iowa	566	749	2,573	4,563	5,050
Kansas	694	1,184	1,573	2,670
Kentucky	311	2,853	2,395	1,183
Michigan	44	2,426	7,019	6,695	10,123
Minnesota	1,618	788	3,019	4,019	7,033
Missouri	556	2,624	4,725	5,228	5,453
Montana	648	897	819	1,308
Nebraska	584	1,949	2,122	2,679
Nevada	1	4	5	5	6	5
New Mexico	33	99	66	523	492
New York	70	998	1,705	929
North Dakota	218	389	529	1,059	937
Ohio	3,535	13,943	14,371	8,534
Oklahoma	608	1,297	1,212	1,547	3,580
Oregon	4
Pennsylvania	573	2,907	3,440	2,490
South Dakota	33	228	442	582	721
Tennessee	60	....
Texas	183	1,755	3,980	2,836
Utah	364	969	1,022	1,227
Virginia	40	646	120	129
Washington	185	285	919
West Virginia	861	2,976	619	482
Wisconsin	981	1,335	4,944	5,347	7,005
Wyoming	202	232	367	291
Alaska
Totals.....	450	214	14,505	29,843	78,449	97,007	96,265

Destination of Sugar Shipped from Cane Sugar Refineries

Table 62 shows the monthly distribution by states from cane sugar refineries, for the year, from November, 1917, to November, 1918. New York state, as is to be expected, received the largest quantity in each month, the minimum being 17,232 tons in December and the maximum 77,849 tons in May. Pennsylvania followed New York, with a total of 333,485 tons for the year and a maximum of 47,697 tons in May, a minimum of 12,437 tons in December. In general the

60

19 Crop (In Short Tons)

February	March	April	May	June	July	August	September	Total, Entire Crop
796	547	512	742	365	511	90	....	5,465
1,055	273	350	659	930	390	13	....	6,896
6,770	4,830	4,416	5,251	7,022	10,402	2,806	....	60,308
2,095	2,446	2,252	2,572	3,307	4,365	4,235	630	28,755
625	640	703	795	831	1,381	1,094	1,077	9,217
11,514	16,583	12,507	12,543	14,532	5,316	....	....	134,213
1,921	2,296	1,893	1,318	832	42	....	....	23,732
3,179	3,466	4,397	5,569	5,883	5,057	1,476	170	42,698
1,163	1,579	2,459	2,419	3,082	2,809	....	....	19,632
376	202	399	....	38	....	....	....	7,757
6,109	6,732	6,297	8,823	2,169	611	....	....	57,048
4,445	4,732	6,306	8,343	9,586	5,997	397	....	56,283
3,669	6,514	7,051	6,083	8,003	5,667	....	....	55,573
1,173	924	1,360	1,364	1,287	1,581	1,664	1,199	14,224
1,796	2,181	2,514	3,796	3,670	4,592	1,489	167	27,539
7	6	6	7	9	9	7	....	77
462	366	390	558	420	758	18	....	4,185
431	348	550	238	....	....	....	....	5,269
662	878	805	1,269	1,509	1,488	520	300	10,563
5,579	5,010	3,129	2,721	42	....	....	....	56,864
2,287	1,115	1,868	1,114	1,028	1,261	302	20	17,239
....	118	30	210	383	488	....	30	1,263
1,121	1,910	1,055	511	....	....	....	....	14,007
805	621	896	1,258	1,451	1,624	905	90	9,656
....	....	....	....	....	....	....	....	60
3,437	2,024	2,693	2,786	4,769	4,111	....	....	28,574
1,016	1,077	922	1,569	2,249	2,415	2,235	1,409	16,474
....	36	38	....	....	....	....	....	1,009
795	250	515	345	647	595	....	10	4,546
365	165	181	95	....	....	....	....	5,744
2,752	4,353	2,564	1,136	2,001	474	....	....	32,892
322	377	342	433	389	745	498	81	4,279
....	....	6	....	....	....	....	....	6
66,727	72,599	69,406	74,527	76,434	62,689	17,749	5,183	762,047

distribution of sugar from refineries increased rapidly from November to May and decreased progressively from May through October, with significant declines for the months of December and April. It is interesting to note that the beet distribution was heaviest in the months of November, December and January, thus supplementing the meagre cane supplies of those months.*

* The crop of Louisiana direct consumption sugars is also distributed in this period.

TABLE
Distribution of Beet Sugar to All States

	January	February	March	April	May
Arizona	181	240	100	255	340
Arkansas	1,785	114	....	....	....
California	2,351	1,684	1,598	3,398	6,147
Colorado	1,615	1,415	1,600	1,636	1,974
Idaho	130	615	293	418	600
Illinois	13,896	24,781	10,635	20,683	8,292
Indiana	2,427	28	3	....	187
Iowa	3,517	3,736	6,135	4,195	2,579
Kansas	1,665	2,004	2,455	463	1,315
Kentucky	1,625	41	....	....	....
Michigan	1,428	5,219	913	815	178
Minnesota	8,034	3,588	9,368	3,547	1,834
Missouri	7,964	4,231	4,163	2,463	2,468
Montana	55	313	377	471	736
Nebraska	2,778	1,028	4,078	1,410	2,232
Nevada	45	16	13	....	38
New Mexico	30	168	124	464	341
New York	344	....	....	1	....
North Dakota	840	566	1,030	543	517
Ohio	6,637	2,500	196	9	....
Oklahoma	1,550	2,942	1,709	474	450
Oregon	48	40	....	90	527
Pennsylvania	1,305	39	....	....	....
South Dakota	758	48	1,189	405	696
Tennessee .....	....	....	....	....	....
Texas	5,191	1,499	....	469	1,233
Utah	389	522	622	899	1,333
Virginia	30	....	....	....	....
Washington	440	385	520	890	1,128
West Virginia	32	....	....	....	....
Wisconsin	5,744	1,900	5,954	4,083	3,001
Wyoming	222	190	263	231	175
Total	73,056	59,852	53,338	48,312	38,321

Table 63 combines the cane* and beet distribution for the year from November, 1917, to November, 1918. For the country as a whole the general situation is no different from the cane sugar distribution, since there is a steady increase from December to May (with the temporary recessions in December and April), and a constant decline from May to October. The distribu-

* Refiners' cane only, not including Louisiana direct consumption cane sugars.

61

(Short Tons) for Calendar Year 1918

June	July	August	September	October	November	December	Total, 1918
695	....	63	95	30	234	903	3,136
....	....	....	....	425	841	971	4,136
7,046	5,048	1,438	944	2,164	2,747	4,521	39,086
2,699	....	1,838	2,242	2,136	1,587	1,851	20,593
750	584	521	286	535	429	554	5,715
1,639	....	509	9,200	7,139	12,617	21,059	130,450
....	....	....	....	941	4,253	4,714	12,553
4,350	1,051	215	1,195	749	2,573	4,563	34,858
4,083	2,908	577	150	1,044	1,184	1,573	19,421
....	....	....	....	311	2,853	2,395	7,225
....	....	....	44	2,426	7,019	6,695	24,737
5,786	....	731	4,356	964	3,036	4,096	45,340
1,959	....	289	899	3,022	4,875	5,228	37,561
844	648	1,145	1,165	1,252	940	819	8,765
4,022	2,411	993	1,495	706	1,949	2,122	25,224
9	35	6	4	5	5	6	182
738	100	30	96	99	66	523	2,779
....	....	....	....	70	998	1,705	3,118
1,132	504	1,242	1,062	745	529	1,059	9,769
....	....	....	....	3,535	13,943	14,371	41,191
78	....	....	608	1,450	1,245	1,547	12,053
375	195	....	15	....	....	....	1,290
....	10	....	....	573	2,907	3,440	8,274
799	833	277	719	274	442	582	7,022
....	....	....	....	....	....	60	60
676	....	33	....	183	1,755	3,980	15,019
1,756	2,984	1,035	410	661	982	1,022	12,615
....	....	....	....	40	646	120	836
1,543	10	....	....	....	185	285	5,386
....	....	....	....	861	2,976	619	4,488
134	....	1	1,158	3,033	4,944	5,347	35,299
347	294	262	397	443	233	367	3,424
41,460	17,615	11,205	26,540	35,816	78,994	97,097	581,606

tion was actually much greater in November, December and January than the beet and cane figures indicate, since in these months the Louisiana cane crop was delivered from the factories, for which no figures by states are available. The individual states show many fluctuations as compared with the total for the whole United States. Alabama, for instance, has its largest distribution in July, when a total of 4,024 tons is reached (all cane). So also the highest point for Arizona is reached in June. These irregularities, however, are exhibited mainly by the smaller states.

TABLE
Distribution of Cane Sugar From

State	November	December	January	February	March
Alabama	821	1,189	2,636	3,837	2,824
Arizona	352	104	765	457	585
Arkansas	91	540	1,084	2,100	1,867
California	6,423	5,644	7,705	5,726	10,097
Colorado	332	170	895	669	858
Connecticut	1,150	1,660	2,504	4,249	5,658
Delaware	409	272	369	534	633
District of Columbia.....	815	612	771	1,251	2,221
Florida	507	1,297	1,265	2,753	2,013
Georgia	2,874	3,389	7,527	6,261	6,836
Idaho	400	327	283	314	375
Illinois	5,220	3,545	4,573	8,664	23,329
Indiana	232	257	413	6,539	10,115
Iowa	799	307	934	2,968	6,420
Kansas	840	425	990	2,298	2,900
Kentucky	590	983	952	4,372	6,339
Louisiana	2,408	3,237	5,994	7,299	6,161
Maine	875	663	1,011	1,217	1,925
Maryland	2,726	3,068	3,324	6,036	7,770
Massachusetts	7,665	7,252	13,431	12,142	19,400
Michigan	767	119	405	5,298	11,774
Minnesota	605	210	1,026	1,360	3,831
Mississippi	825	1,107	1,221	1,915	1,603
Missouri	1,572	1,340	2,050	8,116	8,768
Montana	301	201	907	569	778
Nebraska	555	180	363	777	1,877
Nevada	162	25	128	60	105
New Hampshire	345	247	591	630	1,688
New Jersey	4,380	3,952	6,971	9,516	11,318
New Mexico	246	60	397	228	310
New York	24,294	17,232	31,300	53,908	67,889
North Carolina	322	813	1,331	2,602	3,698
North Dakota	49	....	44	88	162
Ohio	1,250	1,746	3,786	19,464	25,854
Oklahoma	584	188	71	1,755	2,332
Oregon	2,279	961	1,421	1,070	2,055
Pennsylvania	16,141	12,437	18,171	30,064	33,976
Rhode Island	587	694	904	1,802	2,216
South Carolina	236	812	1,279	1,729	3,036
South Dakota	7	....	44	72	200
Tennessee	1,991	3,778	3,528	6,377	5,994
Texas	1,342	864	6,091	5,871	6,061
Utah	214	....	437	248	306
Vermont	561	404	811	1,391	1,999
Virginia	2,677	3,321	2,608	5,316	7,874
Washington	3,269	1,195	2,680	2,536	3,329
West Virginia	503	1,300	1,784	2,814	3,946
Wisconsin	532	455	1,083	2,145	5,194
Wyoming	180	36	96	183	129
Total	102,305	88,618	148,954	247,590	336,628

The total combined cane and beet distribution for May was 445,727 tons, representing 12.52 per cent. of the yearly total, while in December only 206,859 tons (less than half of the May figure) were distributed, only 5.81 per cent. of the total for the year. Forty-five per cent. of the year's distribution of cane and beet sugar occurred in the four months March through June. To

Refineries (Short Tons—1917-1918)

April	May	June	July	August	September	October	Total
1,811	2,921	2,574	4,024	2,782	2,453	2,179	30,051
679	522	637	429	433	215	383	5,561
1,077	2,037	2,393	3,419	2,758	2,200	1,528	21,094
9,437	10,745	11,871	11,883	15,178	8,142	5,002	107,853
485	479	651	75	90	353	143	5,200
4,445	7,263	5,216	2,243	2,320	1,403	1,397	39,508
901	1,468	1,064	614	576	705	639	8,184
2,335	2,874	2,857	976	795	1,195	1,372	18,074
1,982	2,334	1,393	2,469	1,120	956	1,008	19,097
4,049	5,849	6,439	8,152	5,478	4,722	3,408	64,984
461	711	831	364	312	307	270	4,955
23,290	15,195	18,513	29,373	14,699	10,900	6,929	164,230
8,301	11,476	11,141	8,788	6,169	4,242	3,611	71,284
3,630	5,353	7,669	6,462	4,277	3,572	2,089	44,480
2,759	1,737	2,198	2,584	4,135	2,239	1,091	24,196
3,108	5,817	5,166	4,164	3,543	2,691	2,331	40,056
6,954	6,894	4,688	5,052	3,407	3,422	3,391	58,907
2,721	4,126	3,113	2,636	867	1,080	888	21,122
9,005	10,405	8,870	4,350	5,560	5,167	4,519	70,800
17,629	24,496	19,706	17,086	11,070	9,958	11,783	171,618
18,626	23,997	13,369	11,210	4,407	3,356	1,324	94,652
3,231	4,894	5,071	4,762	4,184	4,455	1,652	35,281
790	1,743	1,734	2,259	1,819	1,409	1,654	18,079
9,126	9,627	11,120	6,303	7,845	6,797	3,391	76,055
579	844	626	81	63	368	32	5,349
1,617	1,377	751	723	2,164	1,517	862	12,763
68	158	133	132	74	134	107	1,286
1,153	1,317	1,591	919	437	746	734	10,398
10,560	16,432	14,529	7,024	5,345	6,963	8,018	105,008
245	272	253	234	456	394	216	3,311
61,630	77,849	64,099	40,129	40,021	37,824	42,398	558,573
4,292	2,734	2,463	3,128	1,797	2,020	2,158	27,358
207	245	289	189	152	52	6	1,483
24,399	34,905	24,510	14,177	8,975	8,639	5,111	172,816
1,902	3,277	3,625	3,769	3,623	1,673	288	23,087
2,369	4,498	5,637	2,100	2,065	1,563	1,872	27,890
31,575	47,697	44,111	27,727	17,765	27,417	26,404	333,485
2,616	3,658	2,220	1,336	1,327	1,104	1,183	19,647
2,848	1,824	2,070	2,685	1,532	1,790	1,605	21,446
238	264	691	150	554	814	823	3,857
3,336	5,788	6,264	6,770	5,370	4,851	3,647	57,694
6,784	9,385	7,192	12,918	9,668	7,423	4,566	78,165
262	257	496	37	32	33	113	2,435
1,740	2,421	1,616	1,454	378	865	1,013	14,653
7,608	9,307	8,275	10,094	4,131	4,481	5,221	70,913
3,843	6,477	8,095	2,880	2,268	3,239	3,756	43,567
3,885	6,514	5,265	3,691	2,194	2,997	1,912	36,805
4,943	6,823	6,967	8,200	5,130	2,300	844	44,616
90	120	247	....	....	....	....	1,081
315,621	407,406	360,299	290,224	219,345	201,146	174,871	2,893,007

New York State there was delivered 569,702 tons for the year, or 16.00 per cent. of the total, to Pennsylvania, 344,225 tons, or 9.67 per cent., Illinois, 310,418 tons, or 8.72 per cent. These three states thus received over one-third of the total. The largest quantity delivered to any one state in any single month was the 77,849 tons shipped to New York in May. (See Diagram 10.)

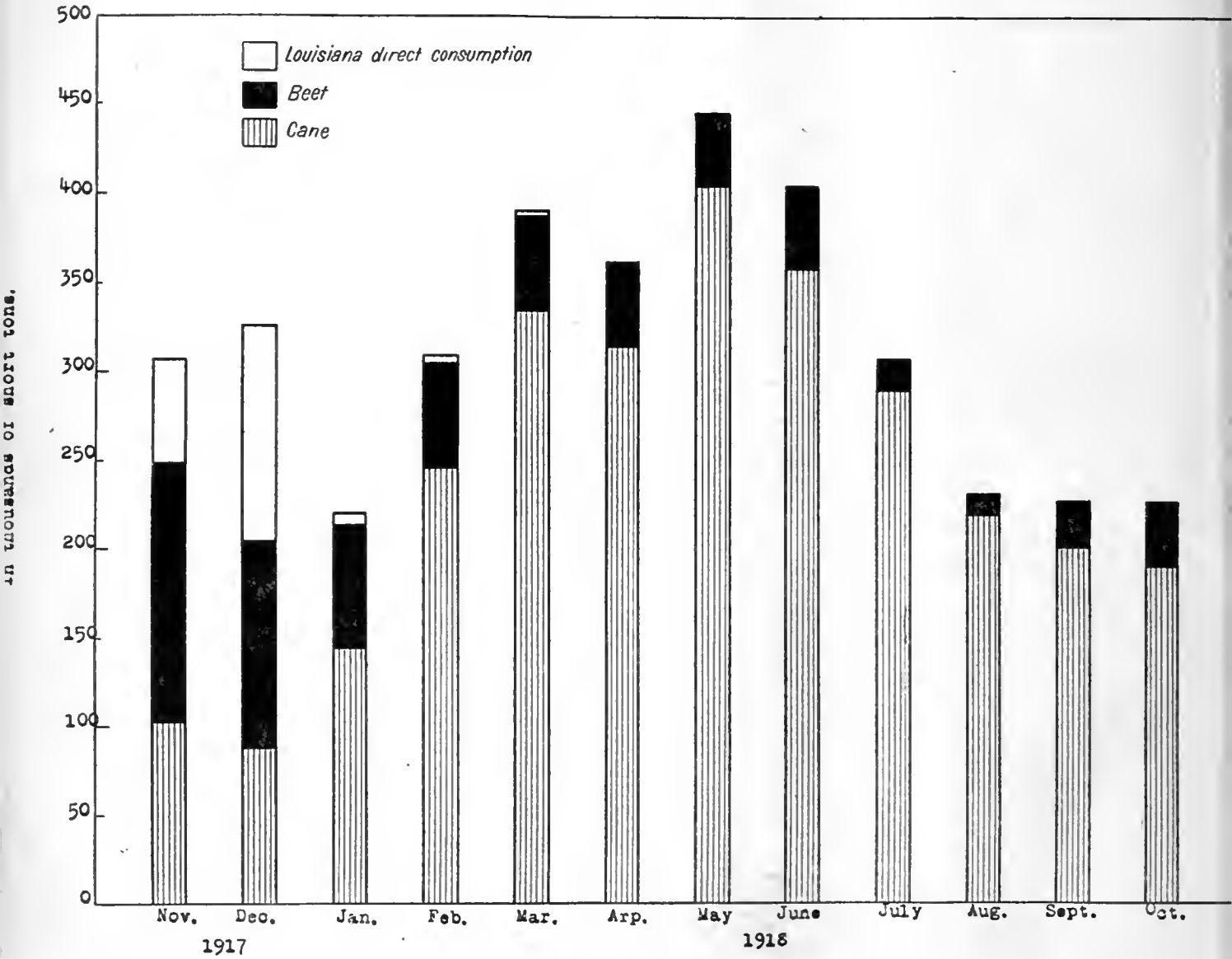
TABLE
Distribution of Cane and Beet Sugar From Refineries and Beet Sugar Mills

	1917 November	1917 December	1918 January	February	March	April
Alabama	821	1,189	2,636	3,837	2,824	1,811
Arizona	845	1,062	946	697	685	934
Arkansas	2,621	4,206	2,869	2,214	1,867	1,077
California	11,419	9,143	10,056	7,410	11,695	12,835
Colorado	2,097	2,839	2,510	2,084	2,458	2,121
Connecticut	1,150	1,660	2,504	4,249	5,658	4,445
Delaware	409	272	369	534	633	901
District of Columbia	815	612	771	1,251	2,221	2,335
Florida	507	1,297	1,265	2,753	2,013	1,982
Georgia	2,874	3,389	7,527	6,261	6,836	4,049
Idaho	762	523	413	929	668	879
Illinois	32,826	25,353	18,469	33,445	33,964	43,973
Indiana	6,574	8,052	2,840	6,567	10,118	8,301
Iowa	7,975	7,092	4,451	6,704	12,555	7,825
Kansas	4,858	3,325	2,655	4,302	5,355	3,222
Kentucky	2,121	4,638	2,577	4,413	6,339	3,108
Louisiana	2,408	3,237	5,994	7,299	6,161	6,954
Maine	884	696	1,011	1,217	1,925	2,721
Maryland	2,726	3,280	3,324	6,036	7,770	9,005
Massachusetts	8,246	7,318	13,431	12,142	19,400	17,629
Michigan	12,799	8,060	1,833	10,517	12,687	19,441
Minnesota	9,806	5,540	9,060	4,948	13,199	6,778
Mississippi	825	1,107	1,221	1,915	1,603	790
Missouri	14,388	9,318	10,014	12,347	12,931	11,589
Montana	1,598	826	962	882	1,155	1,050
Nebraska	4,555	2,444	3,141	1,805	5,955	3,027
Nevada	237	91	173	76	118	68
New Hampshire	345	247	591	630	1,688	1,153
New Jersey	4,380	3,952	6,971	9,516	11,318	10,560
New Mexico	648	797	427	396	434	709
New York	31,547	20,693	31,644	53,908	67,889	61,631
North Carolina	322	813	1,331	2,602	3,698	4,292
North Dakota	1,105	632	884	654	1,192	750
Ohio	14,522	9,570	10,423	21,964	26,050	24,408
Oklahoma	5,101	3,926	1,621	4,697	4,041	2,376
Oregon	2,830	1,124	1,469	1,110	2,055	2,459
Pennsylvania	21,432	15,959	19,476	30,103	33,976	31,575
Rhode Island	620	748	904	1,802	2,216	2,616
South Carolina	236	812	1,279	1,729	3,036	2,848
South Dakota	1,211	1,010	802	120	1,389	643
Tennessee	1,991	3,778	3,528	6,377	5,994	3,336
Texas	7,518	9,515	11,282	7,370	6,061	7,253
Utah	1,870	1,147	826	770	928	1,161
Vermont	609	404	811	1,391	1,999	1,740
Virginia	2,677	3,739	2,638	5,316	7,874	7,608
Washington	4,215	2,322	3,120	2,921	3,849	4,733
West Virginia	503	2,442	1,816	2,814	3,946	3,885
Wisconsin	5,391	6,383	6,827	4,045	11,148	9,026
Wyoming	773	277	318	373	392	321
Total	246,992	206,859	222,010	307,442	389,966	363,933
Per cent. of total distributed each month	6.94	5.81	6.23	8.63	10.95	10.22

(Short Tons) for Year November, 1917, to October, 1918(Inclusive)

May	June	July	August	September	October	November, 1917, to October, 1918 Total	Per Cent. of Total Con- sumed by Each State	Total Beet	Total Cane
2,921	2,574	4,024	2,782	2,453	2,179	30,051	.84	....	30,051
862	1,332	429	496	310	413	9,011	.26	3,450	5,561
2,037	2,393	3,419	2,758	2,200	1,953	29,614	.83	8,520	21,094
16,892	18,917	16,931	16,616	9,086	7,166	148,166	4.16	40,313	107,853
2,453	3,350	75	1,928	2,595	2,279	26,789	.75	21,589	5,200
7,263	5,216	2,243	2,320	1,403	1,397	39,508	1.09	....	39,508
1,468	1,064	614	576	705	639	8,184	.23	....	8,184
2,874	2,857	976	795	1,195	1,372	18,074	.51	....	18,074
2,334	1,393	2,469	1,120	956	1,008	19,097	.54	....	19,097
5,849	6,439	8,152	5,478	4,722	3,408	64,984	1.82	....	64,984
1,311	1,581	948	833	593	805	10,245	.29	5,290	4,955
23,487	20,152	29,373	15,208	20,100	14,068	310,418	8.72	146,188	164,230
11,663	11,141	8,788	6,169	4,242	4,552	89,007	2.50	17,723	71,284
7,932	12,019	7,513	4,492	4,767	2,838	86,163	2.42	41,683	44,480
3,052	6,281	5,492	4,712	2,389	2,135	47,778	1.34	23,582	24,196
5,817	5,166	4,164	3,543	2,691	2,642	47,219	1.33	7,163	40,056
6,894	4,688	5,052	3,407	3,422	3,391	58,907	1.65	....	58,907
4,126	3,113	2,636	867	1,080	888	21,164	.59	42	21,122
10,405	8,870	4,350	5,560	5,167	4,519	71,012	1.99	212	70,800
24,496	19,706	17,086	11,070	9,958	11,783	172,265	4.84	647	171,618
24,175	13,369	11,210	4,407	3,400	3,750	125,648	3.53	30,996	94,652
6,728	10,857	4,762	4,915	8,811	2,616	88,020	2.47	52,739	35,281
1,743	1,734	2,259	1,819	1,409	1,654	18,079	.51	....	18,079
12,095	13,079	6,303	8,134	7,696	6,413	124,307	3.49	48,252	76,055
1,580	1,470	729	1,208	1,533	1,284	14,277	.40	8,928	5,349
3,609	4,773	3,134	3,157	3,012	1,568	40,180	1.13	27,417	12,763
196	142	167	80	138	112	1,598	.05	312	1,286
1,317	1,591	919	437	746	734	10,398	.29	....	10,398
16,432	14,529	7,024	5,345	6,963	8,018	105,008	2.95	....	105,008
613	991	334	486	490	315	6,640	.19	3,329	3,311
77,849	64,099	40,129	40,021	37,824	42,468	569,702	16.00	11,129	558,573
2,734	2,463	3,128	1,797	2,020	2,158	27,358	.77	....	27,358
762	1,421	693	1,394	1,114	751	11,352	.32	9,869	1,483
34,905	24,510	14,177	8,975	8,639	8,646	206,789	5.81	33,973	172,816
3,727	3,703	3,769	3,623	2,281	1,738	40,603	1.14	17,516	23,087
5,025	6,012	2,295	2,065	1,578	1,872	29,894	.84	2,004	27,890
47,697	44,111	27,737	17,765	27,417	26,977	344,225	9.67	10,740	333,485
3,658	2,220	1,336	1,327	1,104	1,183	19,734	.55	87	19,647
1,824	2,070	2,685	1,532	1,790	1,605	21,446	.60	....	21,446
960	1,490	983	831	1,533	1,097	12,069	.34	8,212	3,857
5,788	6,264	6,770	5,370	4,851	3,647	57,694	1.62	....	57,694
10,618	7,868	12,918	9,701	7,423	4,749	102,276	2.87	24,111	78,165
1,590	2,252	3,021	1,067	443	774	15,849	.45	13,414	2,435
2,421	1,616	1,454	378	865	1,013	14,701	.41	48	14,653
9,307	8,275	10,094	4,131	4,481	5,261	71,401	2.00	488	70,913
7,605	9,638	2,890	2,268	3,239	3,756	50,556	1.42	6,989	43,567
6,514	5,265	3,691	2,194	2,997	2,773	38,840	1.09	2,035	36,805
9,824	7,101	8,200	5,131	3,458	3,877	80,411	2.26	35,795	44,616
295	594	294	262	397	443	4,739	.13	3,658	1,081
445,727	401,759	307,839	230,550	227,686	210,687	3,561,450	100.00	668,443	2,893,007
12.52	11.28	8.64	6.47	6.39	5.92	....	100.00	....	....

DIAGRAM 10—MONTHLY DISTRIBUTION OF SUGAR IN THE UNITED STATES FOR YEAR NOVEMBER 1, 1917, TO OCTOBER 31, 1918



CHAPTER VI

DISTRIBUTION OF SUGAR AMONG VARIOUS CLASSES OF CONSUMERS

A question of considerable importance at the present moment, in relation to the shortage of sugar in the United States, is the determination of the quantities of sugar used by the candy and soft drink manufacturers, the commercial canners and preservers of fruits and vegetables, and so forth. Early in the history of the Food Administration it was found imperative to restrict the non-essential uses of sugar, and as a basis for intelligent action some statistics relating to the matter were very much desired. Scant data were then available on this subject* and figures had to be compiled showing the quantities used by various classes of consumers. Early in 1918, as a result of a more or less empirical survey, based on information received from manufacturers, the following table was drawn up, showing the quantities of sugar normally used in various manufactured products:

TABLE 64
Quantities of Sugar Used in Various Manufactured Products
(Quantities in Short Tons Refined)

Confectionery	350,000 tons
Bread	45,000 "
Crackers	55,000 "
Sweet Doughs	45,000 "
Pies	47,500 "
Cakes	37,500 "
Sundry Bakery Goods.....	9,000 "
Chewing Gum	15,000 "
Soft Drinks	135,000 "
Ice Cream	64,000 "
Tobacco	26,000 "
Soap	900 "
Canned Vegetables	4,000 "
Canned Fruits—	
California, Oregon, Washington.....	17,000 "
Rest of United States.....	9,000 "
Condensed Milk	100,000 "
Proprietary Medicines	6,100 "
Total.....	966,000 "

Much more accurate data were obtained, bearing on these matters under the operations of the "certificate plan" of distribution, in operation from July 1 to December 1, 1918. A representative of the United States Sugar Equalization Board traveled all over the United States in the latter part of 1918, in order to standardize the operations of the "certificate plan" in the different states. Incidentally, he obtained the following figures from the Federal Food Administrators, showing the number of manufacturers in the United States using sugar, the number of hotels and public eating places, the bakers and the retail grocers:

*In 1901 the United States Bureau of Labor determined the actual direct household consumption of sugar in 2,567 families of workingmen for the whole year in various parts of the country. The average for the United States was 50.56 pounds per capita, and since the total usage of sugar in that year, as reported by Willett & Gray, was 69.7 pounds, the per capita quantity used outside the household must have been 18.14 pounds. In percentages then, 72.5 per cent. of the per capita consumption in 1901 was household consumption, while 27.5 per cent. went into other channels. Since 1901, however, there has been a tremendous expansion in the sugar-using industries, so that the impression in sugar trade circles was that in 1916 about one-third of the entire consumption was outside the household.

TABLE 65

Sugar-Using Manufacturers, Hotels and Public Eating Places, Bakeries and Retail Grocers in Each State

	Manufacturers of Soft Drinks and Non-Essentials	Manufacturers of Essential Food Products Using Sugar	Hotels and Public Eating Places	Bakers	Retail Grocers
Alabama	900	101	905	125	6,550
Arizona	368	133	969	266	1,424
Arkansas	800	200	1,300	197	7,907
California	3,611	1,729	8,121	1,844	9,340
Colorado	465	464	1,283	324	2,979
Connecticut	1,100	1,100	1,300	650	6,000
Delaware	111	111	200	54	977
District of Columbia.....	406	153	1,420	146	1,315
Florida	500	500	1,550	220	5,450
Georgia	3,189	1,283	2,878	287	12,011
Idaho	438	145	703	105	1,145
Illinois	2,900	2,900	6,573	2,061	21,568
Indiana	932	932	2,512	941	10,814
Iowa	868	867	3,099	670	6,708
Kentucky	997	225	1,622	353	11,129
Kansas	1,500	243	1,645	550	7,693
Louisiana	461	460	2,014	375	8,360
Maine	507	765	1,977	266	3,165
Maryland	1,010	398	1,208	505	5,764
Massachusetts	4,250	1,500	4,750	4,000	16,000
Michigan	950	950	3,459	700	10,400
Minnesota	1,020	520	3,200	600	8,400
Mississippi	450	150	870	93	8,190
Missouri	1,975	1,641	2,747	1,354	12,485
Montana	150	150	1,100	125	1,600
Nebraska	1,001	160	1,412	375	3,256
Nevada	225	136	456	56	344
New Hampshire	271	271	1,069	195	1,556
New Jersey	2,153	1,445	4,109	1,508	9,110
New Mexico	214	28	825	75	1,597
New York	4,150	4,150	16,200	5,800	35,000
North Carolina	484	485	1,994	108	11,213
North Dakota	332	331	901	213	1,843
Ohio	1,916	1,915	5,400	2,100	20,000
Oklahoma	1,075	20	1,831	360	5,274
Oregon	541	541	2,387	568	2,524
Pennsylvania	4,772	1,787	5,933	2,433	27,456
Rhode Island	525	150	620	195	2,190
South Carolina	581	256	1,068	101	7,121
South Dakota	601	50	912	150	1,650
Tennessee	600	600	1,800	200	9,500
Texas	1,870	1,870	6,000	800	16,200
Utah	460	180	766	332	1,411
Vermont	200	100	400	100	1,200
Virginia	1,132	199	1,713	200	10,186
Washington	1,292	405	2,882	672	3,597
West Virginia	400	400	2,000	250	7,400
Wisconsin	1,375	1,188	2,638	957	7,800
Wyoming	102	101	672	103	559
Totals	56,130	34,388	121,393	34,662	375,361

It is striking to note that the number of so-called non-essential sugar users totaled 56,130 as against only 34,388 manufacturers of essential products. The number of bakers in the United States was practically equal to the number of manufacturers of essential food products, while the number of hotels and public eating places was almost four times as great. The tremendous difficulty of any form of government regulation of retail food distribution and prices becomes manifest when one notes that there are 375,361 retailers in the United States.

From July 1, 1918, to December 1, 1918, strict control over sugar consumption in the United States was in effect. All users of sugar were divided into five classes, denoted A, B, C, D and E. Class A comprised all non-essential industries. These were to be restricted for the period July 1 to September 30 to 50 per cent. of their consumption in the corresponding months of 1917. Class B included all the industries using sugar for preserving and canning fruits and vegetables, that is, the essential food industries. These were to be allowed their full needs. Class C included all public eating places regularly serving 25 persons or more. These were to be allowed 3 pounds of sugar for every 90 meals served in the third quarter of 1917. Class D included all manufacturers of baked goods, who were to receive 70 per cent. of the 1917 consumption. Finally, Class E included retailers and all dealers selling sugar for direct consumption, who were to be allotted their requirements based on 3 pounds per customer per month. This plan, directed from Washington, was put into operation by the State Food Administrators through the use of certificates. The retail grocer and the other classes of business described above received from their State Food Administrators "Sugar Distribution Certificates" of different quantitative denominations covering their sales of sugar to different types of customers. These certificates passed from retailer to wholesaler and from wholesaler to refiner or beet sugar manufacturer, unless, of course, the retailer bought directly from the refiner or manufacturer of sugar. The refiner or manufacturer then returned these certificates to the State Food Administrators who issued them.

Close record was kept of the issue of these certificates. The following tables show the amounts issued to all States of the Union for each class, for the five months when the "certificate plan" was in operation.

TABLE 66

July, 1918, Issue of Sugar Certificates to all States for All Classes of Business (in Pounds)

State	Class A— Non-Essential Industries (50 per cent. of 1917 usage)	Class B— Essential Industries (not restricted)	Class C— Public Eating Places (3 lbs. per 90 meals served in third quarter of 1917)	Class D— Manufacturers of Baked Goods (70 per cent. of 1917 usage)	Class E— Retailers and Dealers Selling for Direct Consumption (3 lbs. per customer per month)	Total
Alabama	637,000	5,700	101,600	90,600	5,171,400	6,006,300
Arizona	150,882	42,961	82,100	54,229	1,112,676	1,442,848
Arkansas	235,000	90,000	135,000	61,000	3,450,000	3,971,000
California	2,046,000	2,750,000	1,430,000	1,287,000	11,440,000	18,953,000
Colorado	485,000	352,000	243,000	233,000	3,715,000	5,028,000
Connecticut	268,083	167,766	133,700	189,975	6,123,000	6,882,524
Delaware	42,400	60,900	53,100	38,850	1,167,700	1,362,950
District of Columbia.....	376,441	194,412	110,942	46,199	1,140,039	1,868,033
Florida	370,000	250,000	150,000	50,000	2,800,000	3,620,000
Georgia	1,151,405	45,650	180,019	96,720	8,833,215	10,307,009
Idaho	194,285	166,353	123,921	71,246	1,974,255	2,530,060
Illinois	7,671,521	3,346,940	2,981,077	2,994,170	27,093,335	44,087,043
Indiana	2,239,115	901,100	447,165	158,625	10,270,850	14,016,855
Iowa	1,224,000	662,900	225,285	267,115	8,115,000	10,494,300
Kansas	205,450	279,650	213,300	193,550	6,628,450	7,520,400
Kentucky	477,000	709,333	116,500	55,600	4,265,600	5,624,033
Louisiana	509,915	56,275	181,307	229,179	4,463,728	5,440,404
Maine	175,271	525,055	142,843	64,212	3,297,619	4,205,000
Maryland	2,092,321	853,664	225,005	241,349	5,288,384	8,700,723
Massachusetts	6,083,429	943,812	2,492,550	1,739,870	18,164,585	29,424,246
Michigan	1,765,580	3,560,950	389,015	551,025	14,987,790	21,254,360
Minnesota	296,700	79,720	382,435	291,705	10,427,510	11,478,070
Mississippi	403,150	180,575	56,030	27,571	2,210,513	2,877,839
Missouri	1,688,400	381,331	498,472	705,632	11,797,172	15,071,107
Montana	108,000	12,000	120,000	60,000	2,000,000	2,300,000
Nebraska	559,700	247,850	134,800	96,200	4,369,800	5,408,350
Nevada	22,000	14,000	40,000	12,000	260,000	348,000
New Hampshire	177,632	48,919	90,998	58,325	2,361,480	2,737,354
New Jersey	1,572,046	2,241,225	514,380	817,070	15,603,325	20,747,946
New Mexico	47,600	16,150	48,000	19,000	810,000	940,750
New York	9,895,000	9,383,000	1,911,000	2,365,000	43,441,000	66,995,000
North Carolina	348,000	16,000	170,000	60,000	5,580,000	6,174,000
North Dakota	117,479	90,228	85,022	38,566	1,739,308	2,070,603
Ohio	2,100,000	994,700	521,800	524,492	17,057,266	21,198,258
Oklahoma	515,000	25,000	205,000	141,000	6,910,000	7,796,000
Oregon	307,000	624,000	235,000	166,000	1,738,000	3,070,000
Pennsylvania	7,800,583	6,700,279	1,337,562	1,822,874	41,330,012	58,991,311
Rhode Island	219,900	253,100	77,150	138,650	2,339,612	3,028,412
South Carolina	234,390	71,755	94,313	58,659	4,540,330	4,999,447
South Dakota	121,250	70,300	79,965	53,775	2,481,200	2,806,490
Tennessee	725,500	123,750	190,775	140,225	8,352,950	9,533,200
Texas	1,900,000	450,000	460,000	280,000	16,600,000	19,690,000
Utah	163,000	180,000	95,000	80,000	2,225,000	2,743,000
Vermont	444,000	1,766,750	32,200	29,200	1,437,284	3,709,434
Virginia	1,091,299	....	178,118	138,797	7,828,250	9,236,464
Washington	627,750	585,300	343,760	294,200	4,043,035	5,894,045
West Virginia	565,000	248,000	480,000	212,000	3,496,000	5,001,000
Wisconsin	1,790,521	1,211,172	251,539	286,261	9,060,079	12,599,572
Wyoming	50,000	....	77,000	24,000	600,000	751,000
Total, United States..	62,290,998	41,980,525	18,867,848	17,654,716	380,141,653	520,935,740

TABLE 67

August, 1918, Issue of Sugar Certificates to All States for All Classes of Business (in Pounds)

State	Class A— Non-Essential Industries (50 per cent. of 1917 usage)	Class B— Essential Industries (not restricted)	Class C— Public Eating Places (3 lbs. per 90 meals served in third quarter of 1917)	Class D— Manufacturers of Baked Goods (70 per cent. of 1917 usage)	Class E— Retailers and Dealers Selling for Direct Consumption (3 lbs. per customer per month)	Total
Alabama	663,925	39,600	139,950	114,950	6,437,650	7,396,025
Arizona	72,795	24,875	54,618	37,031	478,357	667,676
Arkansas	309,000	91,000	135,000	59,000	3,149,000	3,743,000
California	2,220,000	4,100,000	950,000	1,402,000	8,100,000	16,772,000
Colorado	114,117	64,100	209,726	147,895	2,868,564	3,404,402
Connecticut	607,000	221,000	194,000	309,000	6,633,000	7,964,000
Delaware	53,150	64,410	64,591	51,050	1,161,300	1,390,551
District of Columbia.....	304,256	220,420	182,981	42,499	1,471,902	2,222,058
Florida	201,500	161,790	140,860	81,435	1,833,050	2,418,635
Georgia	1,640,822	90,695	244,178	156,268	7,087,123	9,219,086
Idaho	80,430	89,000	86,650	35,200	1,346,300	1,637,580
Illinois	5,881,664	2,863,849	2,349,380	2,488,308	19,426,693	33,009,894
Indiana	750,810	1,124,165	520,652	30,370	11,814,145	14,240,142
Iowa	584,050	437,625	246,210	443,010	7,527,200	9,238,095
Kansas	175,000	307,300	159,050	227,500	9,175,650	10,044,500
Kentucky	91,450	1,485,617	77,280	159,855	5,861,140	7,675,342
Louisiana	496,902	389,454	243,953	327,054	4,398,086	5,855,449
Maine	171,900	269,180	215,557	145,855	2,250,000	3,052,492
Maryland	1,530,324	200,015	185,243	204,075	4,681,582	6,801,239
Massachusetts	6,083,429	943,812	1,246,275	1,671,957	8,269,580	18,215,053
Michigan	1,252,075	856,650	525,925	959,175	16,695,700	20,289,525
Minnesota	476,060	54,185	370,300	399,175	14,747,490	16,047,210
Mississippi	346,674	236,416	72,968	46,732	3,897,918	4,598,708
Missouri	1,981,016	649,696	427,605	678,057	11,560,374	15,296,748
Montana	135,000	15,000	130,000	70,000	1,460,000	1,810,000
Nebraska	406,060	186,020	159,620	388,400	4,749,050	5,889,150
Nevada	26,400	3,400	41,000	11,500	316,000	398,300
New Hampshire	159,000	62,000	97,000	79,000	642,000	1,039,000
New Jersey	1,856,509	3,926,405	680,130	789,795	723,200	7,976,039
New Mexico	45,000	18,000	39,934	14,710	952,000	1,069,644
New York	13,783,000	12,295,000	2,308,000	5,279,000	38,914,000	72,579,000
North Carolina	256,496	330	148,121	56,001	4,955,654	5,416,602
North Dakota	72,970	48,770	55,711	31,604	2,970,115	3,179,170
Ohio	2,495,184	932,010	921,094	1,473,893	23,425,569	29,247,750
Oklahoma	572,000	37,000	217,000	240,000	5,756,000	6,822,000
Oregon	372,000	547,000	239,000	272,000	2,913,000	4,343,000
Pennsylvania	4,680,000	2,227,675	331,812	1,763,709	11,672,854	20,676,154
Rhode Island	218,135	5,675	105,270	207,450	1,867,045	2,403,575
South Carolina	124,900	89,786	79,086	61,626	3,626,228	3,981,626
South Dakota	123,630	75,885	80,055	56,220	4,519,490	4,855,280
Tennessee	775,250	104,150	208,000	197,425	5,697,275	6,982,100
Texas	1,896,000	333,000	416,000	435,000	11,420,000	14,500,000
Utah	227,263	739,225	62,121	78,205	823,929	1,930,743
Vermont	100,000	89,500	2,200	....	4,900	196,600
Virginia	1,023,765	116,460	819,690	165,725	7,572,786	9,698,426
Washington	643,360	1,229,795	488,582	396,960	4,170,095	6,928,792
West Virginia	93,000	31,000	38,000	32,000	4,926,000	5,120,000
Wisconsin	1,474,615	1,520,351	250,473	543,628	6,817,438	10,606,505
Wyoming	48,500	....	73,500	30,800	340,000	1,092,800
Total, United States..	57,696,490	39,616,291	17,034,301	22,892,102	312,702,482	449,941,666

TABLE 68

September, 1918, Issue of Sugar Certificates to All States for All Classes of Business (in Pounds)

State	Class A— Non-Essential Industries (50 per cent. of 1917 usage)	Class B— Essential Industries (not restricted)	Class C— Public Eating Places (3 lbs. per 90 meals served in third quarter of 1917)	Class D— Manufacturers of Baked Goods (70 per cent. of 1917 usage)	Class E— Retailers and Dealers Selling for Direct Consumption (3 lbs. per customer per month)	Total
Alabama	591,390	14,050	133,135	142,725	5,380,725	6,262,025
Arizona	74,761	25,390	78,572	44,342	940,083	1,163,148
Arkansas	373,100	119,206	158,290	76,296	4,648,077	5,374,969
California	2,202,041	6,499,644	935,729	1,960,367	11,629,388	23,227,169
Colorado	209,757	151,382	354,729	146,064	2,855,976	3,717,908
Connecticut	534,880	152,075	152,725	300,650	121,250	1,261,580
Delaware	48,700	206,970	67,772	63,460	1,161,300	1,548,202
District of Columbia.....	134,007	209,885	194,241	336,650	1,613,757	2,488,540
Florida	220,990	148,995	383,485	144,205	1,918,680	2,816,355
Georgia	1,828,785	68,695	229,890	154,455	7,033,120	9,314,945
Idaho	80,430	89,000	86,650	35,200	1,588,480	1,879,760
Illinois	6,150,149	4,089,149	2,450,053	3,105,652	26,016,359	41,811,362
Indiana	381,977	1,549,503	371,197	1,146,132	12,630,160	16,078,969
Iowa	649,845	270,065	258,645	453,850	9,617,595	11,250,000
Kansas	429,350	24,400	205,750	249,150	7,858,200	8,766,850
Kentucky	564,400	26,200	172,500	198,700	5,167,000	6,128,800
Louisiana	347,385	272,960	212,325	232,950	4,246,050	5,311,670
Maine	164,803	103,865	172,345	132,545	3,227,405	3,800,963
Maryland	2,458,120	319,635	213,340	424,670	7,840,860	11,256,625
Massachusetts	6,779,543	1,472,975	844,030	1,119,309	12,715,955	22,931,812
Michigan	1,151,255	789,905	570,921	1,037,700	6,571,530	10,121,311
Minnesota	636,070	168,215	562,740	463,600	13,345,945	15,176,570
Mississippi	277,615	200,035	90,515	50,235	4,374,470	4,992,870
Missouri	1,901,131	1,710,324	551,633	856,344	12,044,551	17,063,983
Montana	144,000	16,000	140,000	70,000	1,300,000	1,670,000
Nebraska	451,380	19,250	125,680	433,050	5,700,280	6,729,640
Nevada	20,000	3,500	27,000	11,000	307,300	368,800
New Hampshire	159,840	62,160	90,000	60,000	1,508,000	1,880,000
New Jersey	2,583,204	3,760,425	639,425	963,475	10,042,887	17,989,416
New Mexico	47,190	18,885	44,378	31,396	1,203,747	1,345,596
New York	13,094,971	20,038,901	2,583,337	7,347,740	31,283,933	74,348,882
North Carolina	601,638	9,048	198,473	68,662	5,265,113	6,142,934
North Dakota	92,633	51,928	118,550	54,437	6,260,339	6,577,887
Ohio	2,910,021	2,896,130	719,090	1,816,110	20,732,063	29,073,414
Oklahoma	606,000	33,000	261,000	316,000	5,565,000	6,781,000
Oregon	409,000	680,000	254,000	249,000	2,814,000	4,406,000
Pennsylvania	5,486,733	3,816,084	1,104,630	2,103,852	45,240,940	57,752,239
Rhode Island	212,130	....	101,594	210,800	1,294,194	1,818,718
South Carolina	235,500	101,405	112,135	67,260	4,178,855	4,695,155
South Dakota	133,030	76,570	93,341	67,420	5,845,424	6,215,785
Tennessee	991,700	76,550	282,000	240,650	8,996,150	10,587,050
Texas	1,900,000	330,000	420,000	430,000	12,700,000	15,780,000
Utah	355,517	35,800	9,846	98,610	2,733,475	3,233,248
Vermont	346,510	990,450	39,079	34,746	1,103,628	2,514,413
Virginia	1,270,000	431,000	342,000	370,400	7,453,000	9,866,400
Washington	660,560	578,620	579,214	457,931	5,178,739	7,455,064
West Virginia	15,000	20,350	48,150	2,500	13,602,000	13,688,000
Wisconsin	1,152,381	2,083,367	326,142	546,942	9,162,917	13,271,749
Wyoming	35,000	....	58,000	786,000	750,000	865,000
Total, United States..	62,104,422	54,811,946	18,162,276	28,955,232	374,689,900	538,802,776

TABLE 69

October, 1918, Issue of Sugar Certificates to All States for All Classes of Business (in Pounds)

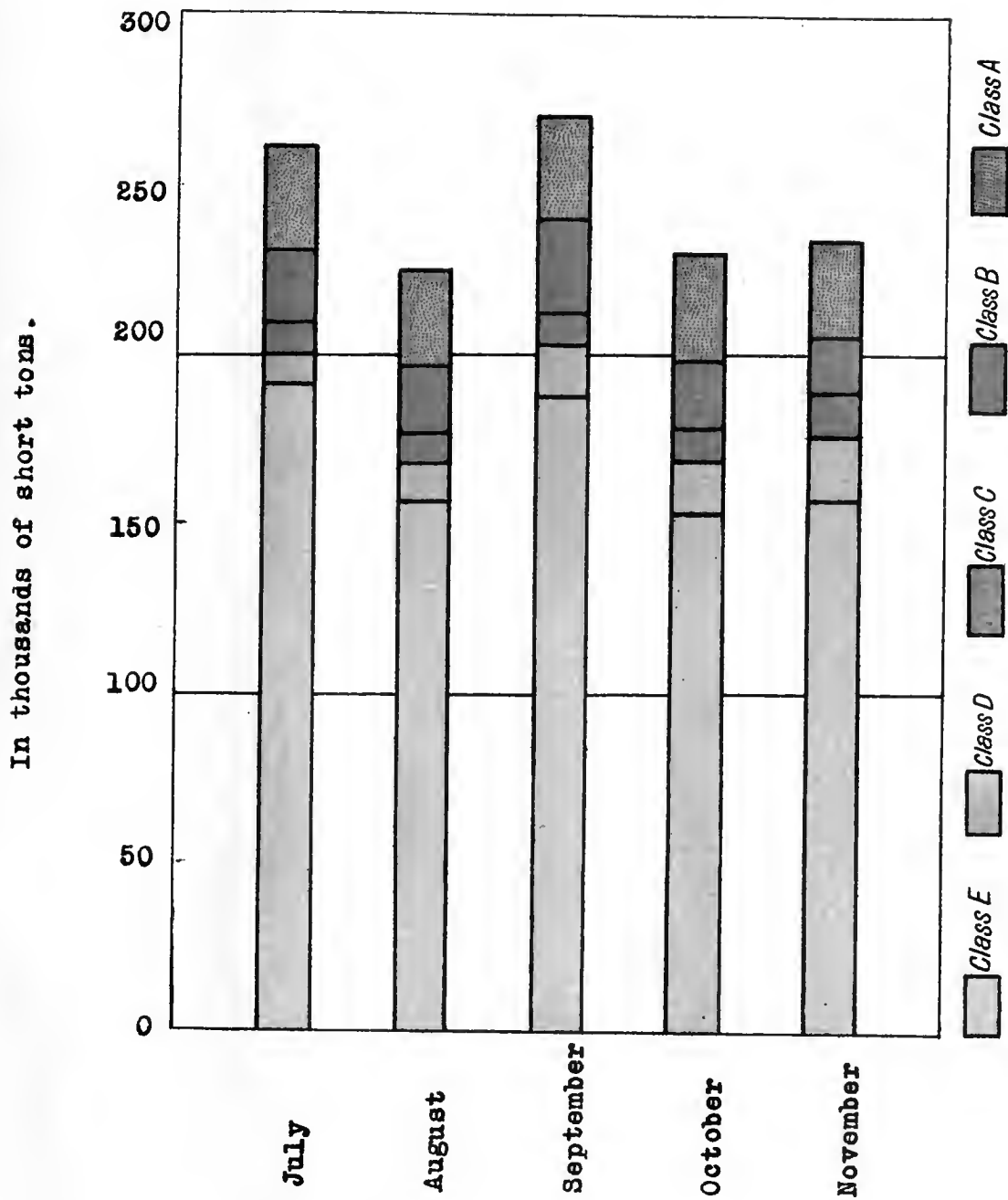
State	Class A— Non-Essential Industries (50 per cent. of 1917 usage)	Class B— Essential Industries (not restricted)	Class C— Public Eating Places (3 lbs. per 90 meals served in third quarter of 1917)	Class D— Manufacturers of Baked Goods (70 per cent. of 1917 usage)	Class E— Retailers and Dealers Selling for Direct Consumption (3 lbs. per customer per month)	Total
Alabama	760,450	530	179,385	185,675	4,086,400	5,212,440
Arizona	63,342	21,589	68,225	50,838	765,663	969,657
Arkansas	284,672	154,375	154,365	92,050	3,959,396	4,644,858
California	2,100,000	1,700,000	1,172,000	2,409,000	8,500,000	15,881,000
Colorado	325,377	82,182	153,115	323,460	3,598,811	4,482,945
Connecticut	509,180	84,450	169,255	322,485	2,534,830	3,620,200
Delaware	40,605	201,052	25,298	52,015	617,165	936,135
District of Columbia.....	118,095	181,293	289,504	334,911	1,424,766	2,348,569
Florida	208,980	241,880	237,360	122,850	2,763,555	3,574,625
Georgia	1,978,430	67,295	209,865	160,555	6,216,840	8,632,985
Idaho	83,450	84,600	96,725	35,300	1,222,925	1,523,000
Illinois	5,774,416	5,050,057	2,268,923	2,990,229	17,580,884	33,664,509
Indiana	278,935	1,406,790	430,511	779,280	5,458,850	8,354,366
Iowa	891,555	297,065	302,000	499,400	4,126,880	6,116,900
Kansas	367,085	604,875	243,625	288,375	4,499,695	6,003,655
Kentucky	723,500	1,681,750	173,525	184,525	6,721,100	9,484,400
Louisiana	61,666	554,994	212,906	233,531	4,380,418	5,443,515
Maine	186,580	62,300	123,181	150,645	1,564,000	2,086,706
Maryland	2,172,550	502,750	205,525	475,705	4,435,005	7,791,535
Massachusetts	6,419,313	1,133,853	915,638	2,342,125	9,889,459	20,700,388
Michigan	1,239,148	1,476,088	504,770	1,255,195	13,809,515	18,284,716
Minnesota	1,667,010	107,975	459,600	795,720	11,318,345	14,348,650
Mississippi	215,388	145,000	100,911	54,107	4,044,448	4,559,854
Missouri	2,486,943	791,735	571,723	1,154,530	12,087,265	17,092,196
Montana	25,000	225,000	150,000	100,000	1,675,000	2,175,000
Nebraska	316,210	310,260	139,275	498,800	3,595,355	4,859,900
Nevada	12,000	6,000	32,000	14,000	270,000	334,000
New Hampshire	78,650	35,350	93,015	75,230	1,018,845	1,301,090
New Jersey	1,940,760	821,745	406,565	1,099,780	7,767,930	12,036,780
New Mexico	51,430	17,940	38,614	18,715	984,078	1,110,777
New York	12,634,871	11,102,032	2,284,096	6,870,930	30,677,373	63,569,302
North Carolina	502,180	33,083	179,825	90,705	5,185,113	5,909,906
North Dakota	115,860	69,205	83,590	45,225	1,527,620	1,841,500
Ohio	4,086,545	2,009,985	782,900	2,076,385	11,898,261	20,854,076
Oklahoma	572,000	20,000	262,000	273,000	5,476,000	6,603,000
Oregon	387,000	75,735	289,948	267,750	2,174,943	3,195,676
Pennsylvania	6,334,862	3,937,941	1,029,461	2,852,720	39,436,661	53,591,645
Rhode Island	194,375	32,750	98,397	250,000	1,466,087	2,041,609
South Carolina	259,017	99,258	12,209	79,920	3,431,415	3,981,819
South Dakota	171,580	125,490	99,015	214,730	1,051,100	1,661,915
Tennessee	833,150	138,950	222,775	286,075	5,007,050	6,488,000
Texas	2,300,000	300,000	490,000	445,000	12,000,000	15,535,000
Utah	415,667	59,529	88,323	112,280	729,549	1,405,348
Vermont	211,470	1,903,230	41,345	37,475	1,540,940	3,734,460
Virginia	1,200,000	122,000	364,000	383,600	7,519,000	9,588,600
Washington	642,555	293,285	652,331	477,470	5,067,284	7,132,925
West Virginia	221,800	239,000	29,000	467,000	6,455,000	7,401,800
Wisconsin	1,006,067	885,279	338,646	746,546	12,919,125	15,895,663
Wyoming	22,000	....	54,000	31,000	590,000	697,000
Total, United States..	63,492,019	39,497,525	17,629,265	33,106,842	305,059,944	458,785,595

TABLE 70

November, 1918, Issue of Sugar Certificates to All States for All Classes of Business (in Pounds)

State	Class A— Non-Essential Industries (50 per cent. of 1917 usage)	Class B— Essential Industries (not restricted)	Class C— Public Eating Places (3 lbs. per 90 meals served in third quarter of 1917)	Class D— Manufacturers of Baked Goods (70 per cent. of 1917 usage)	Class E— Retailers and Dealers Selling for Direct Consumption (3 lbs. per customer per month)	Total
Alabama	600,240	67,445	296,570	190,850	6,666,560	7,821,665
Arizona	82,507	22,118	92,703	48,193	1,035,166	1,280,687
Arkansas	199,969	53,715	208,000	96,050	3,956,587	4,514,321
California	1,800,000	1,900,000	1,250,000	1,500,000	9,650,000	16,100,000
Colorado	305,776	83,024	164,225	58,190	3,145,965	3,757,180
Connecticut	541,125	52,600	377,800	571,550	3,611,700	5,154,775
Delaware	75,000	337,600	62,000	67,500	914,000	2,456,100
District of Columbia	120,248	13,672	531,755	302,956	1,716,711	2,885,342
Florida	127,255	216,220	198,950	132,865	2,498,025	3,173,315
Georgia	1,876,270	68,310	28,121	158,520	7,252,919	9,384,140
Idaho	89,640	32,100	122,210	40,200	1,253,250	1,537,400
Illinois	7,166,471	8,773,030	2,874,178	6,248,725	20,508,353	45,570,757
Indiana	806,940	857,847	554,322	1,290,560	9,712,822	13,222,491
Iowa	689,420	316,719	441,385	644,765	6,862,770	8,955,059
Kansas	316,275	411,310	294,205	335,570	4,830,485	6,187,845
Kentucky	567,375	2,077,535	263,600	191,975	7,677,075	10,777,560
Louisiana	190,762	127,175	330,181	321,565	6,179,579	7,149,262
Maine	196,210	224,240	205,914	156,405	2,346,000	3,128,769
Maryland	2,118,020	403,885	367,695	500,270	4,786,700	8,176,570
Massachusetts	6,024,100	1,019,965	1,366,109	2,217,810	12,786,791	23,414,775
Michigan	1,630,420	2,563,900	986,195	1,312,830	9,266,100	15,759,445
Minnesota	1,211,730	47,000	681,930	535,175	6,982,175	9,458,010
Mississippi	100,066	93,000	128,912	54,469	4,077,871	4,454,318
Missouri	2,133,152	1,462,683	737,003	1,520,241	12,946,895	18,799,974
Montana	10,000	10,000	150,000	95,000	2,725,000	2,990,000
Nebraska	312,990	245,910	223,510	514,490	3,783,550	5,080,450
Nevada	14,000	8,000	56,000	16,000	410,000	504,000
New Hampshire	98,536	49,269	217,990	32,050	1,775,510	2,173,355
New Jersey	1,453,065	835,230	721,750	1,352,285	10,203,035	14,565,365
New Mexico	39,670	575	63,620	27,025	1,099,785	1,230,675
New York	7,623,609	3,947,950	4,396,855	7,170,455	25,766,088	48,904,957
North Carolina	355,179	10,826	274,025	88,458	6,891,910	7,620,398
North Dakota	104,090	29,515	129,075	47,400	1,401,440	1,711,520
Ohio	2,623,965	520,305	1,205,400	2,308,890	16,220,485	22,879,045
Oklahoma	325,500	31,500	371,000	320,000	8,542,000	9,590,000
Oregon	298,000	242,000	267,000	270,000	2,150,000	3,227,000
Pennsylvania	8,257,540	3,149,737	1,210,839	3,551,576	25,122,236	41,291,928
Rhode Island	188,680	17,575	152,357	231,525	2,221,666	2,811,803
South Carolina	235,862	25,899	185,466	80,200	5,078,350	5,605,777
South Dakota	155,610	42,590	140,230	66,190	2,411,950	2,816,570
Tennessee	988,000	143,800	284,875	299,750	4,668,150	6,384,575
Texas	1,151,000	350,000	530,000	520,000	14,750,000	17,300,000
Utah	211,700	11,155	131,325	92,350	1,192,450	1,638,980
Vermont	481,435	738,950	42,005	44,095	1,053,404	2,359,889
Virginia	661,600	303,800	662,300	419,000	7,981,400	10,028,100
Washington	511,641	167,055	791,790	444,835	4,162,095	6,077,416
West Virginia	255,500	18,000	365,400	10,000	4,465,658	5,114,558
Wisconsin	1,219,360	983,035	551,649	825,031	7,929,791	11,508,866
Wyoming	17,000	....	78,500	31,000	781,000	907,500
Total, United States..	56,559,203	33,109,369	25,766,924	37,554,839	313,451,459	466,442,487

DIAGRAM 11. Sugar Used by Different Types
of Consumers July- November 1918.



Summarizing the above figures, we find that the various classes of consumers used the following amounts and percentages of the total supply in each month:

TABLE 71
*Summary of Distribution Under the Certificate Plan.
Quantities in Short Tons*

Month	Class A, Amount,	Class B, Amount,	Class C, Amount,	Class D, Amount,	Class E, Amount,	Total,
July	31,145	20,990	9,434	8,827	190,071	260,467
August	28,848	19,808	8,517	11,446	156,351	224,970
September	31,052	27,406	9,081	14,478	187,385	269,402
October	31,746	19,749	8,815	16,553	152,530	229,393
November	28,280	16,555	12,883	18,777	156,726	233,221
Total	151,071	104,508	48,730	70,081	843,063	1,217,453

Percentages

Month	Class A Per Cent.	Class B Per Cent.	Class C Per Cent.	Class D Per Cent.	Class E Per Cent.	Total Per Cent.
July	12.0	8.0	3.6	3.4	73.0	100.00
August	13.0	8.8	3.7	5.1	69.4	100.00
September	11.5	10.2	3.4	5.4	69.5	100.00
October	13.8	8.6	3.9	7.2	66.5	100.00
November	12.1	7.1	5.5	8.1	67.2	100.00
July-November.....	12.4	8.6	4.0	5.8	69.2	100.00

Thus, even on the basis of the restricted household consumption of 2 to 3 pounds per capita per month, the dealers selling for direct household consumption required from a minimum of 66.5 per cent. of the total supply in October to a maximum of 73 per cent. of the total in July. For the five months combined, out of a total distribution of sugar of 1,217,453 short tons, 843,063 tons, or 69.2 per cent., went into the households of the country. The "non-essentials" absorbed 151,071 tons, or 12.4 per cent. of the total, although they were restricted to 50 per cent. of the 1917 usage, while the essentials required only 104,508 tons, or 8.6 per cent., although they were entitled to 100 per cent. of their requirements. The implication of these figures is that the so-called "non-essentials" consume in normal times somewhat over 300,000 tons in the five months from July through November, a monthly average of 60,000 tons, or around 700,000 short tons of refined sugar per year, while the so-called "essentials" consume normally about 240,000 tons per year. The normal quantity of sugar consumed per annum by the various industries, essentials and non-essentials, may therefore be set at about 1,000,000 short tons of refined sugar, or approximately 25 per cent. of the total annual consumption. This result coincides practically with that obtained by the United States Bureau of Labor in its 1901 investigations, when it was found that 27.5 per cent. of the total annual sugar consumption was outside the household. (See Diagram 11.)

CHAPTER VII

EXPORTS OF REFINED SUGAR FROM THE UNITED STATES

The various agencies of the Food Administration did not attempt to obtain reports of sugar exports from the United States from the trade because the Department of Commerce issued these figures for monthly periods. But it was found necessary to obtain from the refiners weekly reports of the quantities of sugar refined "on toll" in behalf of the British Royal Commission on the Sugar Supply, in order to distinguish between genuine exports (the sugars which, if not exported, would normally go into domestic consumption) and the "toll" shipments which represented the sugars shipped from Cuba by the British Royal Commission to be refined in the United States and reshipped abroad. Such a distinction was, of course, not made in the reports of the Department of Commerce. In this chapter these figures are given, as well as a statistical summary of the effect of the war upon the sugar export trade of the United States.

TABLE 72

Exports of Domestic and Foreign Sugars from the United States by Calendar Years, 1905-1919
(Short Tons)

Year	Domestic	Foreign	Total
1905.....	8,615	1,343	9,958
1906.....	10,810	1,976	12,786
1907.....	11,662	4,142	15,804
1908.....	13,283	3,335	16,618
1909.....	40,859	8,221	49,080
1910.....	76,132	20,701	96,833
1911.....	16,206	5,295	21,501
1912.....	39,338	3,076	42,414
1913.....	25,885	7,498	33,383
1914.....	195,202	16,054	211,256
1915.....	481,654	21,490	503,144
1916.....	788,355	890	789,245
1917.....	505,440	7,908	513,348
1918.....	203,642	452	204,094
1919.....	737,605	2,357	739,962

Table 72 shows the exports of domestic and foreign sugar from the United States for the years 1905 through 1919, as compiled from the "Monthly Summaries" of the Department of Commerce. It will be readily seen that the exports of foreign sugars were always a small portion of the total and since the outbreak of the European war they have been relatively insignificant in view of the large shipments of domestic refined sugar since that time. Before 1914, the domestic refined sugar export trade of the United States was practically negligible in relation to the large import trade, which was 3,227,000 tons in 1914. But, directly after war was declared in that year, the export trade of the United States began to increase rapidly, following the blockade of the Central Powers and the consequent dependence of the United Kingdom upon Cuba for raw sugar and upon the United States for refining capacity. The rapidity and abruptness of this increase is shown in Table 73 where the exports of domestic refined sugar are shown by months for the years 1913 to 1919, inclusive. (See Diagram 12.)

TABLE 73

Shipments of Refined Sugar from the United States by Months
(Unit: Short Tons)

Month	1913	1914	1915	1916	1917	1918	1919
January	1,499	2,627	12,177	27,279	22,175	5,584	32,833
February	1,600	1,892	16,149	88,851	38,088	3,465	34,971
March	2,574	2,067	5,466	80,421	41,449	1,258	43,977
April	1,810	1,521	2,355	64,537	46,145	3,866	87,815
May	2,731	2,295	24,977	86,547	35,649	11,009	54,767
June	2,242	1,616	30,194	76,984	77,248	18,392	143,499
July	1,926	1,678	61,508	122,736	46,809	6,099	62,479
August	1,542	19,478	76,388	84,166	78,403	22,069	59,550
September	1,965	26,145	40,349	62,579	31,691	26,947	44,445
October	3,390	69,186	107,137	51,991	56,624	40,052	59,099
November	2,562	29,556	53,930	22,622	20,913	28,778	64,576
December	2,044	37,142	51,024	19,642	10,246	36,123	49,594
Total.....	25,885	195,203	481,654	788,355	505,440	203,642	737,605

The maximum monthly shipment in 1913 was the 3,390 tons in October, while the total for the entire year was only 25,885 tons. In 1914 up to August the monthly shipments continued small, the maximum being but 2,627 tons in January. In August, however, shipments jumped to 19,478 tons and in October mounted to the astonishing figure of 69,186 tons, almost three times the total for the entire year 1913. By the end of 1914, 195,203 tons had been shipped abroad, but this was only a beginning, as later developments showed.

In 1915, the shipments were especially heavy in the summer months, the record being established in October, when 107,137 tons were exported. But, although the total for the year 1915 reached the enormous figures of 481,654 tons, the peak was not yet attained, for in 1916 788,355 tons were exported. In 1917, the United States entered the world conflict and towards the end of the year rigid export control on sugar was instituted by the War Trade Board in coöperation with the Food Administration, and the total shipments for the year 1917 were thus reduced considerably, being but 505,440 tons as against the 1916 record of 788,355 tons. During the year 1918, exports were limited by the joint action of the War Trade Board and the Food Administration to the Allies and to a few neutral countries, so that the total for the year was only 203,642 tons. Following the end of the War in November, 1918, government restrictions on exports were removed and in 1919 the greatest volume of shipments since 1916 was recorded, the total being 737,605 tons, as against 788,355 tons in 1916. The year 1919 also witnessed the largest exports for any single month, 143,499 tons in June, as against the previous record of 122,736 tons in July, 1916.

The above figures of large exports, as reported by the Department of Commerce, particularly in the years 1917 and 1919, resulted, naturally enough, in the general impression that the American refiners were shipping enormous quantities of sugars abroad, while the people of the United States were suffering from a severe shortage. But as already noted above, of the shipments from the United States, the greatest proportion were not exports in the ordinary sense of the term, but represented the sugars sent here to be refined "on toll" in behalf of the British Royal Commission on the Sugar Supply. In order to ascertain precisely the amount of the genuine exports and the amount of "toll" shipments, the refiners were requested to report to the Statistical Department of the International Sugar Committee in 1918 and to the United States Sugar Equalization Board, in 1919, the quantity of sugar refined "on toll" for the Royal Commission. The figures compiled from these reports are shown in Table 74, together with the figures of the Department of Commerce for all exports:

TABLE 74
Exports and "Toll" Shipments from United States, 1918-1919
(Unit: Short Tons)

Month	1918			1919		
	Toll Shipments for R. C.	Other Exports	Total exports as reported by Dept. of Com.	Toll Shipments for R. C.	Other Exports	Total exports as reported by Dept. of Com.
January .....	.....	5,584	5,584	32,417	416	32,833
February .....	.....	3,465	3,465	20,041	14,930	34,971
March .....	.....	1,258	1,258	23,549	20,428	43,977
April .....	.....	3,866	3,866	86,398	1,417	87,815
May	10,331	678	11,009	48,680	6,087	54,767
June	3571	} *12,188 {	18,392	101,689	41,810	143,499
July	23,242		6,099	49,118	13,361	62,479
August	7,559	} 8,520 {	22,069	5,876	53,674	59,550
September	18,427		26,947	11,536	*	44,445
October	24,707	15,345	40,052	52,719	} 36,246 {	59,099
November	24,434	} *3,778 {	28,778	48,597		64,576
December	36,689		36,123	68,616	*	49,594
Total	148,960	54,682	203,642	549,236	188,369	737,605

From the above figures it becomes clear how large a portion of the exports of sugar reported by the Department of Commerce were "toll" shipments and not exports in the usual sense. It must not be inferred from what has been said that these "toll" shipments have no relation to the domestic supply situation. For if the American refiners had refused to utilize their excess capacity for refining sugars bought by the British Royal Commission in Cuba or had been prohibited by government injunction from doing so it is reasonable to suppose that the Royal Commission might have been compelled to reduce its Cuban purchases of raws accordingly. The United Kingdom and the countries of Europe for which the Royal Commission purchased sugars would then have been compelled to reduce their sugar rations correspondingly, thus allowing a greater amount for consumption in the United States. Such a selfish policy, however, would have been the height of injustice to these nations, when one recalls that the European countries were living on extremely reduced sugar rations, while the United States was consuming very close to the normal basis, even in the war year 1918, and far above normal in 1919. But, moreover, in the long run such a policy would have been disastrous to the economic interests of the United States, since the British refineries would have been compelled to increase their refining capacity, and would have ultimately become stronger competitors of the American refineries, whose cost of refining would then be increased owing to the smaller scale of operations. These increased costs would probably have been reflected in higher prices for sugar to American consumers ultimately.

The sugars which were refined on "toll" for the British Royal Commission did not all go to the United Kingdom, for the British Commission acted on behalf of other European countries, as well as for the United Kingdom. This fact is demonstrated in the following tables, which show the countries of destination for the monthly shipments from the United States for the years 1916, 1917, 1918 and 1919. Thus, for example, for the year 1916 out of a total of 788,355 short tons only 296,238 tons, or 37½ per cent. was exported to the United Kingdom, while 235,862 tons went to France and 30,919 tons to Italy. The countries which were neutral in the war received appreciable quantities, Norway, for example, obtaining 71,177 tons or over twice as much as Italy.

* Owing to differences in dates, the figures cannot be ascertained for these months individually.

TABLE
Export of Sugar from the United
Unit: Short
(Compiled from the figures in the Monthly
19

Countries to which Exported	January	February	March	April
Belgium	556	....	....	....
Denmark .....	....	....	....	1,120
France	3,486	727	9,399	7,354
Greece	1,846	2,811	7,765	1,486
Italy .....	....	....	....	....
Netherlands	1,120	1,120	500	1,680
Norway	11	6,138	15,088	13,545
Spain .....	....	448	26	21
Switzerland .....	....	6,720	....	2,993
United Kingdom.....	16,682	65,313	40,316	31,588
Panama	230	373	205	236
Mexico	347	321	710	489
Newfoundland and Labrador.....	217	248	406	449
West Indies.....	308	261	267	215
Argentina	30	58	1,191	230
Uruguay	1,661	2,743	2,995	2,665
Philippine Islands	235	66	....	10
British Africa	57	215	103	20
Other Countries	493	1,289	1,450	436
Total	27,279	88,851	80,421	64,537

TABLE
19

Countries to which Exported	January	February	March	April
Belgium	1,691	1,691	....	....
Denmark	426	....	....	....
France	462	11,718	7,657	14,857
Greece .....	....	....	....	....
Italy	72	542	884	2,824
Netherlands .....	....	....	....	1,691
Norway	8,375	3,319	3,184	4,493
Spain	2,936	7,295	6,817	4,059
Switzerland .....	....	....	6,447	....
United Kingdom.....	169	531	480	11,268
Panama	201	318	181	839
Mexico	2,092	3,209	1,324	854
Newfoundland and Labrador.....	580	333	224	433
West Indies.....	308	246	190	283
Argentina	2,915	4,903	10,093	2,090
Uruguay	1,041	3,112	1,679	1,698
Philippine Islands	10	12	1	1
British Africa	22	290	93	415
Other Countries	875	569	2,195	340
Total	22,175	38,088	41,449	46,145

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States by Months to all Destinations

Tons

Summaries of the Department of Commerce)

16

May	June	Total Half Year	July	August	September	October	November	December	Total
2,863	1,124	4,543	1,128	3,241	1,128	1,126	....	2,819	13,985
425	621	2,166	475	430	....	249	64	514	3,898
32,062	15,829	68,857	65,357	40,395	43,750	14,498	1,576	1,429	235,862
1,323	1,167	16,398	125	779	....	6,778	1	5,494	29,575
524	9,933	10,457	10,574	6,093	2,093	920	361	421	30,919
....	3,626	8,046	....	140	....	95	1,129	....	9,410
5,228	8,121	48,131	2,739	921	1,995	8,229	5,627	3,535	71,177
15	5,437	5,947	387	121	134	2,047	4,413	368	13,417
....	....	9,713	280	840	....	113	....	....	10,946
42,362	28,409	224,670	33,526	22,341	7,047	8,291	240	123	296,238
275	167	1,486	229	314	282	157	178	18	2,664
454	331	2,652	829	261	744	1,055	331	1,428	7,300
373	740	2,433	3	365	311	772	534	1	4,419
150	200	1,401	181	541	1,127	859	416	341	4,866
1	564	2,074	6,028	5,358	1,403	2,815	2,743	1,108	21,529
250	....	10,314	....	1,652	1,560	2,710	3,285	1,241	20,762
3	....	314	2	....	....	11	....	....	327
63	187	645	346	143	337	381	465	315	2,632
176	528	4,372	527	231	668	885	1,259	487	8,429
86,547	76,984	424,619	122,736	84,166	62,579	51,991	22,622	19,642	788,355

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May	June	Total Half Year	July	August	September	October	November	December	Total
....	....	3,382	....	846	1,410	....	....	2,256	7,894
....	336	762	224	112	448	....	....	....	1,546
12,164	25,623	72,481	16,395	23,578	12,205	36,591	19,200	5,959	186,409
....	453	453	....	....	....	....	....	112	565
353	4,211	8,886	4,372	162	617	....	4	1	14,042
....	1,352	3,043	....	....	....	3,045	....	....	6,088
5,102	7,114	31,587	5,974	595	50	....	....	....	38,206
1,634	2,288	25,029	610	2,292	598	102	11	....	28,642
4,303	....	10,750	....	....	....	2	....	....	10,752
2,178	13,166	27,792	262	20,150	164	11,053	58	30	59,509
385	147	2,071	66	....	56	20	2	3	2,218
2,910	2,321	12,710	649	2,316	1,442	2,337	1,063	501	21,018
791	122	2,483	3	....	36	174	124	701	3,521
192	182	1,401	160	102	191	115	51	10	2,030
437	5,068	25,506	16,259	18,293	9,176	2,472	10	100	71,816
3,132	1,902	12,564	812	5,905	3,811	109	44	112	23,357
101	1	126	2	1	1	....	....	1	131
113	61	994	217	61	405	40	218	134	2,069
1,854	12,901	18,734	804	3,990	1,081	564	128	326	25,627
35,649	77,248	260,754	46,809	78,403	31,691	56,624	20,913	10,246	505,440

TABLE
Exports of Sugar from the United

Unit:

19

(Compiled from the figures in the Monthly

Countries to which Exported	January	February	March	April
Belgium .....	....	2,856	....	2,520
Denmark .....	....	....	....	....
France	5,398	177	887	564
Greece .....	....	....	....	....
Italy .....	....	11	42	56
Netherlands .....	....	....	....	....
Norway .....	....	....	....	4
Spain .....	....	....	....	....
Switzerland .....	....	....	....	....
United Kingdom.....	2	16	23	52
Panama .....	....	188	92	5
Mexico	78	184	183	146
Newfoundland and Labrador.....	87	....	2	175
West Indies.....	3	13	21	101
Argentina .....	....	....	....	....
Uruguay .....	....	....	....	11
Philippine Islands .....	....	....	3	....
British Africa	3	....	3	1
Other Countries	13	20	2	231
Total	5,584	3,465	1,258	3,866

TABLE

19

Countries to which Exported	January	February	March	April
Belgium .....	....	2,801	2,229	2,972
Denmark .....	....	....	....	....
France	12,494	9,636	8,655	24,395
Greece .....	....	....	217	672
Italy .....	....	5,739	11,444	5,873
Netherlands .....	....	....	....	....
Norway .....	....	....	1	882
Spain .....	....	....	8,788	11,523
Switzerland .....	....	....	....	1,120
United Kingdom.....	17,929	14,453	8,436	26,274
Panama	5	384	46	88
Mexico	2,033	1,449	1,263	1,122
Newfoundland and Labrador.....	263	265	23	291
West Indies.....	3	5	131	248
Argentina .....	....	....	103	....
Uruguay .....	....	5	1,284	2,696
Philippine Islands	1	1	1	....
British Africa	7	....	138	53
Other Countries	98	233	1,218	9,606
Total	32,833	34,971	43,977	87,815

77

States by Months to all Destinations

Short Tons

18

Summaries of the Department of Commerce)

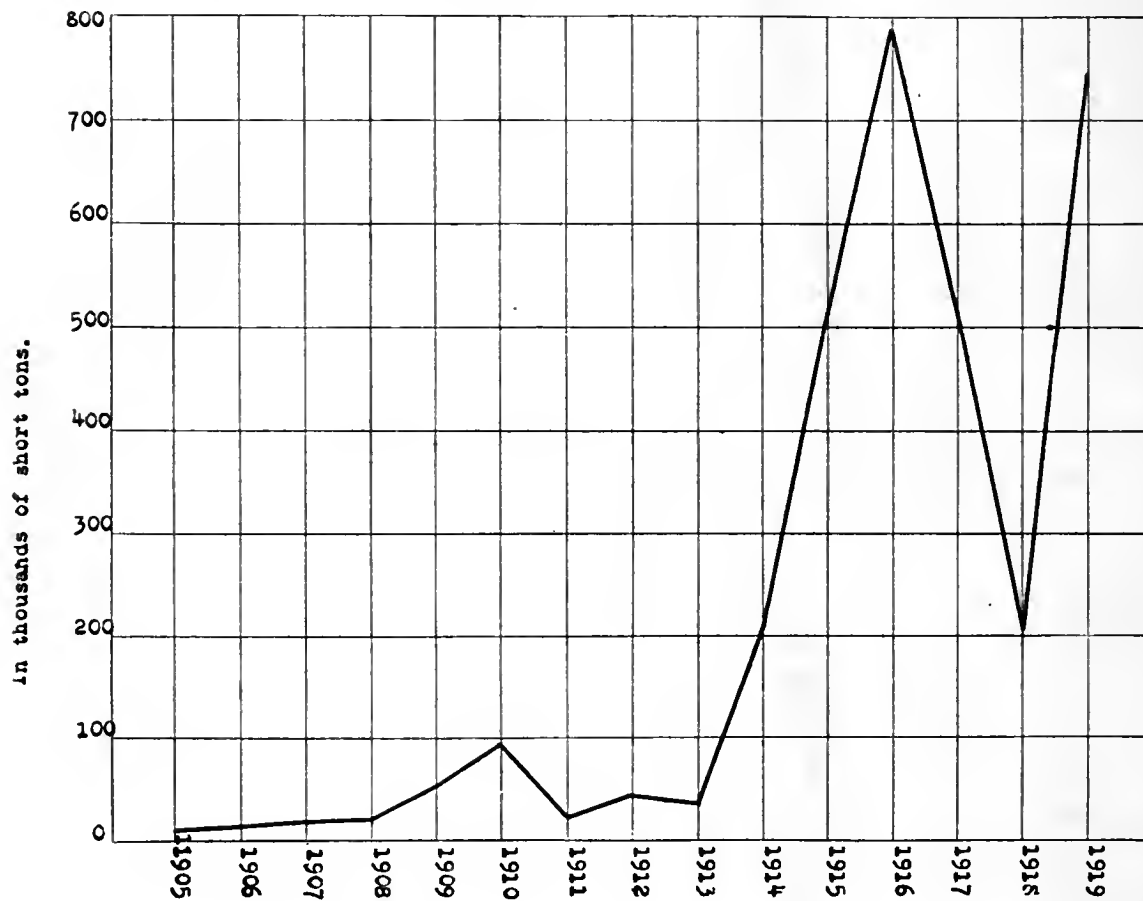
May	June	Total Half Year	July	August	September	October	November	December	Total
....	....	5,376	2,800	1,232	2,800	500	3,016	220	15,944
9,510	4,884	21,420	2,884	11,212	4,391	23,718	17,204	12,921	93,750
....	1	1	....	....	....	....	....	....	1
22	5	136	73	....	28	9,596	2,207	2,823	14,863
....
....	....	4	....	....	2,240	2,800	....	....	5,044
....
....	....	....	....	....	....	14	....	....	14
25	7,027	7,145	38	2	73	....	14	12,542	19,814
97	185	567	1	3	17	1	....	....	589
374	109	1,074	67	35	27	13	130	259	1,605
350	70	684	216	176	175	350	350	1,050	3,001
145	4	287	8	....	....	4	4	6	309
....
....	....	11	....	....	....	....	....	....	11
....	1	4	1	....	....	....	....	....	5
259	208	474	7	1	....	....	....	1	483
227	5,898	6,391	4	9,408	17,196	3,056	5,853	6,301	48,209
11,009	18,392	43,574	6,099	22,069	26,947	40,052	28,778	36,123	203,642

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May	June	Total Half Year	July	August	September	October	November	December	Total
....	....	8,002	17	....	224	....	63	126	8,432
256	1,387	1,643	1,372	1,003	846	56	....	224	5,144
16,343	48,703	120,226	40,294	31,959	30,038	42,021	21,551	27,752	313,841
1,922	1,853	4,664	2,753	4,519	3,081	1,034	8,727	244	25,022
6,409	....	29,465	....	....	....	....	....	....	29,465
....	280	280	280	1	112	46	101	1	821
1,057	1,531	3,471	476	1,414	140	1,312	56	1	6,870
2,328	2,347	24,986	1,135	146	....	1,692	75	....	28,034
....	....	1,120	....	....	....	....	....	....	1,120
19,768	59,293	146,153	2,805	1,317	1,963	10,811	30,460	19,078	212,587
155	253	931	68	50	41	5	4	....	1,099
1,639	1,211	8,717	1,159	1,508	697	437	222	157	12,897
73	140	1,055	....	....	2	1	220	122	1,400
272	263	922	78	49	201	28	28	45	1,351
....	5	108	....	165	....	....	....	....	273
2,699	2,581	9,265	2,821	1,461	925	195	....	....	14,667
....	....	3	75	501	952	....	1	300	1,832
77	57	332	127	106	42	94	190	272	1,163
1,769	23,595	36,519	9,019	15,351	5,181	1,367	2,878	1,272	71,587
54,767	143,499	397,862	62,479	59,550	44,445	59,099	64,576	49,594	737,605

DIAGRAM 12—ANNUAL EXPORTS OF REFINED SUGAR FROM THE UNITED STATES,
1905-1919



In 1917 there was exported to the United Kingdom only 59,509 tons, as against 296,238 tons in 1916, while to France 186,409 tons were shipped, which quantity, though thrice that sent to the United Kingdom, represented an appreciable decline as compared with 1916. Neutral countries received larger proportions of the total than in the previous year, but this was due to large shipments in the first eight months, for in the last part of the year exports were controlled by the War Trade Board and the Food Administration and, consequently, only the Allies received significant quantities.

The effect of rigid government control of the export trade in sugar during 1918 is clearly demonstrated in Table 77. Only the countries associated with the United States in the War received appreciable quantities of refined sugar. The United Kingdom received only 19,814 tons against 93,750 tons for France, 14,863 tons to Italy and 15,944 tons to Belgium.

Following the end of the War, as shown in Table 78, exports in the first reconstruction year, 1919, were very much like those of 1916. The United Kingdom and France, with 212,587 tons and 313,841 tons, respectively, accounted for 71.2 per cent. of the total, while the remainder was widely distributed to nearly all portions of the globe.

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